Medidata Solutions, Inc.
Form 10-K
February 25, 2014
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

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

For the fiscal year ended December 31, 2013

OR

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

For the transition period from to

Commission File Number: 001-34387

Medidata Solutions, Inc.
(Exact name of registrant as specified in its charter)

Delaware	13-4066508
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
350 Hudson Street, 9th Floor New York, New York	10014
(Address of principal executive offices)	(Zip Code)

(212) 918-1800
(Registrant's telephone number, including area code)

Securities registered under Section 12(b) of the Exchange Act:

Title of each class	Name of each exchange on which registered
Common Stock, par value $0.01 per share	The NASDAQ Stock Market LLC

Securities registered under Section 12(g) of the Exchange Act: None

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

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 ý No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. ý Yes ¨ No

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements

incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ý

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

Large accelerated filer ý Accelerated filer ¨ Non-accelerated filer ¨ Smaller reporting company ¨

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

As of June 28, 2013, the last business day of the registrant's most recently completed second fiscal quarter, the aggregate market value of the common stock held by non-affiliates of the registrant was approximately $1,667,842,781 based on the closing sale price for the registrant's common stock on the NASDAQ Global Market on that date of $38.72 per share. For purposes of determining this number, all executive officers and directors of the registrant are considered to be affiliates of the registrant, as well as individual shareholders holding more than 10% of the registrant's outstanding common stock. This number is provided only for the purpose of this report on Form 10-K and does not represent an admission by either the registrant or any such person as to the status of such person.

As of February 18, 2014, the registrant had 54,171,481 shares of common stock outstanding.

Documents Incorporated by Reference:

Part III of this Annual Report on Form 10-K incorporates by reference certain information that will be set forth in the registrant's Proxy Statement in connection with the 2014 Annual Meeting of Stockholders, which will be filed with the Securities and Exchange Commission within 120 days of December 31, 2013. Except with respect to information specifically incorporated by reference in this Form 10-K, the Proxy Statement is not deemed to be filed as part of this Form 10-K.

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MEDIDATA SOLUTIONS, INC.
ANNUAL REPORT ON FORM 10-K
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2013
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PART I

For purposes of this Annual Report, the terms “Medidata,” “Company,” “we,” “us” and “our” refer to Medidata Solutions, Inc. and its consolidated subsidiaries. This Annual Report on Form 10-K contains “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, or Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or Exchange Act, and is subject to the “safe harbor” created by those sections. Forward-looking statements reflect our current estimates, expectations and projections about our future results, performance, prospects and opportunities. Forward-looking statements include, among other things, the information concerning our possible future results of operations, business and growth strategies, financing plans, expectations that regulatory developments or other matters will not have a material adverse effect on our business or financial condition, our competitive position and the effects of competition, the projected growth of the industry in which we operate, the benefits and synergies to be obtained from our completed and any future acquisitions, and statements of management’s goals and objectives, and other similar expressions concerning matters that are not historical facts. Words such as “may,” “should,” “could,” “would,” “predicts,” “potential,” “continue,” “expects,” “anticipates,” “intends,” “plans,” “believes,” “estimates,” “appears,” “projects” and similar expressions, as well as statements in the future ter identify forward-looking statements. Forward-looking statements should not be read as a guarantee of future performance or results, and will not necessarily be accurate indications of the times at, or by which, such performance or results will be achieved. Forward-looking information is based on information available as of the date of this Annual Report on Form 10-K and/or management’s good faith belief with respect to future events, and is subject to risks and uncertainties that could cause actual performance or results to differ materially from those expressed in the statements. We caution readers not to place undue reliance upon any such forward-looking statements. We urge you to consider the risks and uncertainties discussed in “Risk Factors” under Item 1A in this Annual Report on Form 10-K in evaluating our forward-looking statements.

Item 1. Business

Company Overview

We are the leading global provider of cloud-based solutions for clinical research in life sciences, designed to transform clinical development and increase the value of our customers' research investments. Our platform technology and solutions address the lifecycle of the clinical development process, enhancing productivity and quality by speeding time to market, reducing costs, increasing therapeutic value and minimizing operational and program risk.

Our customers are life sciences companies that create and test new drugs, vaccines, devices, diagnostics and other treatments, and create new uses and markets for existing treatments. They include pharmaceutical, biotechnology, medical device and diagnostic companies, academic institutions and medical centers, contract research organizations, or CROs, and other organizations engaged in clinical testing. Life sciences companies test newly formulated, reformulated and expanded treatments under regulatory scrutiny before they are permitted to provide them to consumers. They also continue to test drugs and other treatments after the product is commercially available, in order to expand its reach, understand safety, market or other factors, and to provide additional information to prescribers. They operate under a complex set of scientific, medical, regulatory, commercial and other requirements.

Medidata provides a broad set of advanced technology solutions, analytics and benchmarks aimed at enabling efficient, effective and safe development, using secure cloud and hybrid cloud infrastructure to instantly connect users over the Internet. Our approach is not only to offer solutions that bring efficiencies to existing processes, but also to be a transformative force for enhanced efficiency, productivity and quality in clinical development processes. In addition to our technology and metrics solutions, we offer consulting services that advise clients in making transformational changes to their clinical development processes, and professional services that maximize the value of our technology solutions.

Customers can purchase a single solution, multiple solutions or the entire platform. We offer our cloud-based solutions on a single-study basis that allows customers to use our solutions for a limited number of studies or to evaluate them prior to committing to multi-study arrangements.

We support our solutions with globally-available support offerings, which include always-on, multi-lingual help desk services and escalating issue resolution; and comprehensive professional services offerings, which include consulting, implementation for solutions or platform, integration support and training for customers and investigators. We invest

heavily in training our customers, their investigators and other third parties to assume some or all of the implementation and management activities. We believe this knowledge transfer accelerates customer adoption and provides a better basis for a transformative approach to future development. We also invest in training and enabling a network of implementation partners, including CROs and system integrators, who can provide implementation support to customers who outsource some or all of their development programs to third parties.

Our diverse and expanding customer base currently includes over 20 of the top 25 global pharmaceutical companies measured by drug revenue, and numerous middle-market life sciences companies, as well as CROs. In 2013, no single customer accounted for 10% or more of our total revenues.

Our deep expertise in clinical development, technology and data-driven analytics, derived from facilitating over 4,000 studies across all development phases and therapeutic areas in more than 120 countries, has positioned us as a leader in designing and providing solutions that transform our customers' clinical development processes and bring value to their R&D enterprise. For 2013, we generated $276.8 million in revenues, a 26.8% increase over 2012. Our business model provides us with a recurring revenue stream that we believe delivers greater revenue visibility than perpetual software licensing models.

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Medidata's Approach

Medidata's solutions are designed to address the underlying requirements of clinical development, rather than just its current processes, to maximize the value of the overall research process. Our platform and individual solutions focus on increasing efficiencies, reducing redundancies and optimizing workflow. We also build our solutions to be interoperable with third-party software and data feeds, increasing the value of legacy, installed systems and new technology such as mobile device applications, broadening the development technology enterprise as a collaborative clinical ecosystem.

Our cloud-based solutions, metrics and services allow users to accurately and efficiently design clinical trials; manage and monitor ongoing trial activities; develop and administer trial budgets; capture, manage and report clinical trial data; plan and execute randomized subject allocation methodologies; manage and allocate clinical trial supplies; and view, track, and evaluate trial progress through easy-to-use, Internet-enabled platforms. We believe our solutions provide our customers with the following benefits:

- Faster trial results. Our workflow-focused products, on-demand platform and delivery models streamline the clinical development process, enabling users to compress the time associated with planning, designing and conducting clinical trial programs and maximize returns on development. Our products singly and together minimize redundant data entries and reconciliations, apply automation to data cleansing and integration, and provide actionable reporting and analytics into trial progress. Our data-enriched products provide customers with analytics and benchmarking tools that can be used to improve speed, quality and efficiency of clinical trials.
- Improved quality and visibility of results. Our solutions are designed to drive maximum value from development pipelines through risk minimization, actionable analytics and web-based collaboration. Medidata Rave allows users engaged in clinical trials to enhance the quality and completeness of their data earlier in the process by providing real-time data cleansing and eliminating duplicative manual entry of data. Operational and programmatic decision-making is enhanced through consistent access to reliable data, allowing for adaptive and other innovative trial designs, early identification and termination of unsuccessful trials, and timely visibility to information that may identify safety concerns.
- Comprehensive solutions. We design our comprehensive solutions to provide support throughout the clinical development process: study planning, site engagement, patient engagement and study conduct. By using multiple applications, our customers benefit from minimized redundant processes, streamlined workflows and intelligent planning and decision-making based on data-driven impact analyses.
- Enhanced investigator experience. We design the user interface of our applications to meet the needs of clinicians and life sciences company users, with intuitive, consistent point-and-click navigation and a familiar clinical data entry approach. We incorporate user input into the design of our interface and provide embedded training tools to accelerate end-user adoption, which offers benefits to our life science customers through increased site satisfaction and smoother administration.
- Interoperability and ecosystem. We provide third-party technology providers with access to our application programming interface, or API, and developer tools, which facilitates integration with complementary business systems. Our solutions utilize industry standards to enable broader integrations with minimized intervention.
- Global connectivity. Medidata Rave provides a single data repository that can be used in multiple languages simultaneously, avoiding the need for the installation and maintenance of parallel versions of the system. This capability allows investigators around the world to enter data in a variety of languages while enabling monitors and data managers to view the same data in a consistent language.
- Scalability. Our product architecture scales reliably and cost-effectively across clinical trials of all sizes and phases. Our applications operate on a cloud-based model, further reducing deployment cost per study.

Our Strategy

Our strategy is to become the global standard cloud platform for clinical research, driving the value of our customers' clinical development processes by reducing costs, accelerating time to market, enhancing therapeutic value and minimizing operational and clinical risk. Key elements of our strategy include:

- Broaden our footprint with our existing customers. Our strategy of developing technology solutions across the clinical trial process provides additional avenues for growing our business. We will continue to demonstrate the significant

efficiencies that our existing customer base can achieve by standardizing end-to-end clinical development processes on our platform and by expanding the use of our solutions. We also intend to drive increased usage of our currently-deployed products by facilitating the use of our cloud-based solutions in new trials and converting existing single-study customers into multi-study customers.

- Enhance and integrate our platform of solutions. We intend to continue to build a unified, integrated platform of capabilities across the clinical trial process, enabling a smoother and more resource-efficient development process. We will continue to add new functionalities and features to our existing offerings and add new offerings, bringing technology to currently manual activities.
- Build additional analytics and benchmarks into our platform. We will continue to develop our analytics and benchmark capabilities, creating value for our users through the use of sophisticated analytics and data assets to drive insights and re-engineer inefficient processes.

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- Expand our global client base. We expect clinical technology adoption to continue to increase, resulting in significant growth in spending on technology solutions. Our view is that clinical research is underinvested in technology, and new technologies will expand opportunities by replacing manual and under-automated activities.
- Increase indirect sales channel initiatives. We will continue to pursue strategic partnerships with CROs and systems integrators to position our software and analytics solutions as the platform of choice for their outsourced clinical trial management services. We have invested heavily to position ourselves to maintain our momentum with this channel. Our well-established program of support, training and certification enables indirect channel partners to cost-effectively implement our solutions and services in sponsor studies and to provide additional services related to clinical trial design and deployment.
- Position the Medidata Clinical Cloud as part of the evolving clinical ecosystem. We are building relationships, supporting partnerships and working with innovating technology and data firms to confirm Medidata as a key player in the evolving clinical ecosystem.

Our clinical development solutions enable life science organizations to systematically design protocols; capture, manage and report clinical data from a variety of sources; and manage the trial process and interact effectively with clinical sites. We also provide advanced reporting, visualization and analytics and benchmarking tools that support planning and operations. Additional functionalities allow customers to efficiently develop and execute advanced patient allocation and clinical trial supply plans; aggregate and report patient information in support of other clinical operations functions such as adverse event reporting and investigator monitoring; and access and manage applications through a clinical portal. We have also designed solutions to enable our customers to efficiently plan clinical trials by providing budgeting, pricing, workflow and relationship management capabilities. Our cloud-based business model eliminates the costs associated with installing and maintaining applications within the customer's information technology infrastructure.

Our Cloud-Based Technology

Our subscription revenues, which are comprised of subscription fees from customers accessing our cloud-based solutions, represented 82.3%, 78.6% and 78.3% of our total revenues in 2013, 2012 and 2011 respectively.

Solutions

Medidata Rave. Medidata Rave provides a fully integrated, robust and scalable electronic data capture, or EDC, and clinical data management system, or CDMS, solution. Medidata Rave's rich functionality allows customers to build clinical trials and capture, manage and report clinical trial data on a global basis and in multiple languages, in a scalable and collaborative environment.

Medidata Rave offers a complete set of capabilities designed to allow clinical trial teams to build and deploy studies without the need for software programming professionals. Its intuitive user interface facilitates the capture and cleaning of data from global investigator sites, and is designed to provide and show compliance with regulatory requirements through comprehensive and easy-to-use audit trails and support for electronic signatures as well as industry standards such as Clinical Data Interchange Standards Consortium, or CDISC. It also allows for the real-time integration of data from other sources, including laboratory information management systems, or LIMS, paper case report forms, ePRO devices and interactive voice response systems, or IVRS, and interactive web response systems, or IWRS. It is optimized for ease of use by clinical investigators, who can access, train and communicate with the life science company sponsoring the trial. Medidata Rave's web-based interface provides clinical data management and operations personnel the ability to monitor, query, code and obtain real-time reports and views of study data. The platform further provides comprehensive tools for automated cleaning, tracking, import and export of all study data, and allows independent transformation of clinical data for use in data analysis and warehousing. Medidata Rave's capabilities allow customers to manage mid-study changes without system downtime. Our strong support for industry standards, such as those provided by CDISC, provides a foundation for integration with other systems at sponsors, CROs and technology partners. Multiple language trials are supported in Medidata Rave, with managers, administrators, monitors and investigators entering and having access in real-time to reports in multiple languages, regardless of the data input language.

In addition, unified with Medidata Rave are enhanced capabilities for automating processes to minimize risk and increase efficiencies through eliminating duplicative activities and reducing the amount of resources required for

clinical trial set-up and implementation. These include:

Medidata CTMS. Medidata CTMS, our clinical trial management solution, is a cloud-based offering that streamlines operational workflows, such as site payments and monitor visits, increasing site performance and providing study managers with real time visibility into milestones and metrics. It differs from existing clinical trial management system, or CTMS, applications in delivering these robust capabilities with a rapid implementation profile, low service requirements and universal accessibility within a secure technology.

Medidata Designer. Medidata Designer, our study and protocol design tool, enhances the efficiency of clinical trial start-up, assists with optimization of clinical trial design and guides clinical research teams through the study design and set-up processes. It helps sponsors focus resources on study design, improving quality by enabling line of sight between objectives and endpoints with real-time quality check and visibility into industry benchmark metrics. Medidata Designer can automatically configure Medidata Rave studies, ensuring quality, consistency and efficiency, and also streamline trial execution through reuse of design information in a variety of downstream systems.

Medidata Insights. Medidata Insights provides enterprise clinical business analytics to drive more informed decisions and improve resource allocation in clinical programs. This rapid implementation solution provides cross-study and cross-company trend and

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benchmark analytics, analyzable at relevant levels with advanced reporting and visualization tools that provide operational and high-level insights into trial and program progress.

Medidata Balance. Medidata Balance is a randomization and trial supply management solution that enables development and implementation of sophisticated randomization and supply plans by life sciences organizations and a unified subject allocation and data entry experience by clinical sites. It streamlines the process of developing, building and implementing subject allocation plans, with interactive simulations and audit trail, enabling rapid design and set-up, including full unification with Medidata Rave. Medidata Balance also provides sites with a randomization interface with Medidata Rave, eliminating multiple system requirements and reducing administrative risk. Medidata Balance replaces the existing implementation-heavy processes of alternative randomization and supply trial management systems, most often offered through IVRS, with a short time-to-value, on-demand approach.

Medidata Patient Cloud. Medidata Patient Cloud, a new offering, is a framework leveraging mobile devices (smartphones, tablets, etc.) to engage directly with patients. It captures patient-reported outcomes such as quality of life questionnaires and patient diaries and serves as a foundation for additional interactions. Medidata Patient Cloud offers a controlled, secure environment unified with Medidata Rave to provide clinical study teams with a single source of patient data.

Medidata Grants Manager. Medidata Grants Manager enables our customers to develop and manage cost-effective trial budgets, with benchmark industry data and analysis of their own grant history to increase the efficiency of site contracting and to ensure fair and consistent site payments. Medidata Grants Manager includes data from over one quarter of a million grants and contracts and approximately 28,000 protocols in over 1,500 treatment indications. Medidata Grants Manager Contracting, an extension of the application, allows sponsors to efficiently create, manage and track budget negotiations with hundreds of investigative sites simultaneously. The contracting extension enables automated interaction between sponsors and sites, allowing budget agreements to be reached more quickly and efficiently than with current manual processes.

Medidata CRO Contractor. Medidata CRO Contractor provides an analytics tool that brings industry benchmarks to CRO outsourcing, budgeting and negotiation, parallel to Medidata Grants Manager. Our database includes reliable cost benchmarks from contracts with more than 550 global CROs.

Medidata SQM. Medidata SQM is a set of cloud-based site quality management dashboards that provide study teams with a view of site quality at clinical sites throughout the trial, in order to monitor investigators gathering, recording and reporting patient data efficiently and at the highest quality. Powered by advanced analytics, Medidata SQM's dashboards are fed with industry metrics in order to predict when a site's quality deviates from the norm, alerting the study team to quality changes while the study is ongoing.

Medidata Coder. Medidata Coder provides a centralized medical coding and synonym management solution that is unified with Medidata Rave. Medidata Coder has configurable role-based workflows, as well as query, synonym and dictionary management functionality, including streamlined dictionary migration management that reduces risk, cost and time for the sponsor.

Medidata Safety Gateway. Medidata Safety Gateway provides a solution for collecting and transmitting serious adverse events and related data from the EDC system at sites to safety reporting systems, reducing potential errors and streamlining reporting. Medidata Safety Gateway automatically transmits safety case data entered into Medidata Rave at sites to sponsors' safety reporting systems using an industry-standard file format, reducing the burden of collecting and reconciling safety data.

Medidata Targeted SDV. Medidata Targeted SDV provides clinical research sponsors and CROs with an auditable and scalable solution to implement partial source document verification at sites, supporting current risk-based monitoring strategies that reduce the time and cost that life sciences companies expend to meet regulatory requirements for verifying data collection.

Technology and Support

We have designed our technology to maximize ease of use, flexibility, data visibility and system scalability to handle high-volume, global trials as well as smaller studies. We deploy our solutions through the use of industry-standard web browsers and mobile devices, service-oriented architectures, or SOA, three-tiered server architectures, or a web server, a proprietary application server and a database server. End users can access our solutions through any web

browser from anywhere in the world without downloading or installing any Medidata-specific software. In addition, our cloud-based solutions feature end-to-end support for Unicode characters, required to deliver multi-lingual studies. We utilize technologies such as firewalls, intrusion detection and encryption to ensure the privacy and security of our customers' data.

We develop our solutions on a broad base of technologies, including Java 2 Enterprise Edition, or J2EE, Oracle, Microsoft.NET, Microsoft SQL Server, Business Objects, Ruby, AWS, Cassandra, MySQL and Chef. By creating consistent data models that can accommodate the broad cloud-based requirements of multiple biopharmaceutical, medical device and CRO customers, we have been able to avoid customer-specific builds or other customizations to our core product, thereby streamlining development and maintenance. Furthermore, our interfaces are built on fully documented APIs which allow us to safely update customers' data in new versions of the system, and to develop additional interfaces to address new market opportunities. By including version control and the ability to dynamically integrate data without system interruption, we are better able to accommodate the industry-specific challenges facing clinical trial teams around protocol amendments and the need for incremental changes to study data collection and cleaning processes during a clinical trial.

Medidata provides world-class delivery services to customers utilizing our products, with state of the art virtualization technologies to optimize the delivery of our cloud-based solutions, manage storage effectively and maintain quality of service. These virtualization

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capabilities provide the ability to quickly scale to increased client usage. Medidata manages a hybrid cloud, operating our solutions on a combination of private data center and public cloud. Advanced monitoring services are provided on a 24/7 basis by trained Medidata staff to ensure that usage is delivered in a consistent manner. Advanced backup and storage frameworks are in place, and regionally-diverse data centers and trained engineering teams are utilized to provide for quick reaction time in the event of a disaster.

We have a dedicated global organization to support our customers and applications worldwide. We offer 24/7 support to our customers' investigator sites through multi-lingual help desks located in Edison, New Jersey; Conshohocken, Pennsylvania; Sofia, Bulgaria; Tokyo, Japan; and Dalian, China.

Professional Services

Our professional services represented 17.7%, 21.4% and 21.7% of our total revenues in 2013, 2012 and 2011, respectively.

We offer expert professional services to help life sciences companies realize higher value in their clinical development processes. Our clients vary in their resources and expertise in development, and we provide experienced service professionals to support better ways to conduct trials.

In order to help clients drive additional costs and inefficiencies out of their business, we offer consulting services to advise clients on ways to optimize their clinical development processes from trial concept to conclusion. Our consultants use their extensive clinical expertise to leverage best practices in the use of clinical technologies, streamline and enhance trial processes and increase clients’ competitiveness in the market. We also leverage Medidata Insights benchmarks and reports to help clients evaluate their clinical trial performance across the organization and against industry benchmarks.

Medidata professional services experts work with clients to maximize the value of their clinical research through the use of Medidata solutions. Our clients vary in their resources, expertise and preference for developing or deploying their studies on Medidata technology, and we offer flexible, tailored services to support each client's needs.

Our professional services offerings include:

- Configuration services. We provide implementation of the Medidata Clinical Cloud and our solutions, with efficient, scalable study build and configuration and implementation support. Our methodology leverages both the industry-specific expertise of our employees and the specific capabilities of our platform to simplify, streamline and expedite the implementation of our solutions.
- Sponsor enablement. Our tailored strategies, business solutions and knowledge transfer enable customers to design, configure, implement and manage their own studies; we believe this maximizes the benefits of Medidata technology by enabling customers to develop the degree of autonomy most aligned with their organizational resources and strategic goals.
- Partner support. We offer services supporting successful clinical programs at our CRO and systems integration partners, aimed at maximizing the value of the CRO/sponsor/technology collaboration.
- E-learning and training. We offer self-administered e-learning courses as well as a variety of additional training services through our training group, known as Medidata Academy, to facilitate the successful adoption of our cloud-based solutions throughout the customer or partner's organization.
- Strategic consulting. Our technology and analytics and benchmarking solutions support a re-engineered development enterprise, and our clients vary in their abilities and resources to manage the internal changes that may be required. Medidata’s experienced domain experts provide consulting services to help organizations shift to new processes and systems, including re-engineering business processes across departments and changes in governance models. Our industry and technology experts draw on Medidata’s visibility into best practices and data-driven analytics to advise clients.

Research and Development

We believe that our future success depends on our ability to continue to enhance and broaden our cloud-based solutions to meet the evolving needs of clinical trial sponsors and other entities engaged in clinical trials. As of December 31, 2013, we had 296 employees in research and development. Our research and development efforts are focused on developing new, complementary software solutions, as well as enhancing our existing solutions.

When developing our technical solutions to manage clinical data, industry regulatory requirements also dictate that substantial documentation be created to demonstrate data integrity in the solution, and that our systems perform repeatedly, reliably and in accordance with the system requirements. This process is known in the industry as validation, and our deliverable is a software validation package. Our software development lifecycle practices, which are part of a required quality system, include streamlined methodologies for generating and maintaining validation packages during the software release process. For those products that allow customers to upgrade at their discretion (for example, Medidata Rave), these methodologies include a validated path for upgrading existing installations and data. The robustness of the validation process and associated validation deliverables enable our customers to upgrade with confidence and stay on current technology. This allows Medidata to minimize the number of legacy releases that require maintenance and support. For products which are upgraded automatically, customers receive access to a fully tested software product prior to its official release into production as a fully validated product.

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Our research and development department includes a product management team that works with both internal and customer experts to create new features and functionality, a technical documentation team, as well as product engineering and software quality assurance functions. We also have a dedicated research and development team building integration software and APIs on top of our platform.

We incurred $51.2 million, $42.3 million and $29.6 million in research and development expenses for the years ended December 31, 2013, 2012 and 2011, respectively.

Sales and Marketing

We market and sell our cloud-based solutions through a direct sales force and through relationships with CROs and other strategic partners. Our marketing efforts focus on increasing awareness, consideration and preference for our cloud-based solutions and professional services and generating qualified sales leads. As of December 31, 2013, we had 180 employees in sales and marketing.

Our sales force operates globally with a focus on North America, Europe and Asia. The team is organized by both region and focus area and includes business consultants and sales operations support. Sales through this direct channel currently represent the largest source of our total revenues.

Many sponsors of clinical trials outsource some or all of their clinical research activities as a means of controlling costs, expanding capacity and focusing on core strengths. Our CRO relationships help us position our solutions as the core platform for their outsourced services. Through our Medidata Partner Program, we partner with CROs to deliver our clinical trial technology along with the CRO's project, data management, monitoring and other expertise. We train, certify and support our CRO and other clinical services partners on our solutions, which enable our partners to quickly and cost-effectively implement our technology in sponsors' studies.

As part of our customer and prospect approach, we measure and communicate the value of adopting our cloud-based solutions and platform in lowering costs, reducing time to market, minimizing risk and enhancing therapeutic value. Our marketing objectives are to generate qualified sales leads, enhance the global recognition and reputation our brand and solutions and establish Medidata as the premier provider of clinical trial solutions. Our principal marketing initiatives target key executives and decision makers within our existing and prospective customer base.

Customers

We are committed to developing long-term, partnering relationships with our customers on a global basis and working closely with new customers to configure our systems to meet the unique needs of their trials. Our customers include leading pharmaceutical, biotechnology, medical device and diagnostics companies, institutions (which include academic research centers, government and other non-profit organizations), CROs and other entities engaged in clinical trials. As of December 31, 2013, we had 397 customers, including over 20 of the top 25 global pharmaceutical companies measured by revenue.

Our five largest customers accounted for 29%, 29% and 31% of our revenues in 2013, 2012 and 2011, respectively. In 2013, 2012 and 2011, no single customer accounted for 10% or more of our total revenues.

We sell our solutions and provide services globally. A summary of our domestic and international revenues and long-term assets is set forth in Note 2, "Summary of Significant Accounting Policies—Segment Information," to our consolidated financial statements, which are included in Item 15 of this Annual Report on Form 10-K.

Competition

The market for clinical trial solutions is highly competitive and rapidly evolving. It is subject to changing technology, shifting customer needs, changes in laws and regulations and frequent introductions of new products and services. We compete with firms such as Oracle, Perceptive Informatics and others offering products and services that compete with one or more of our solutions.

We compete on the basis of several factors, including the following:

- breadth and depth of solution offerings;
- platform capabilities, including interoperability;
- ease of use of our solutions and rates of user adoption;
- solution functionality and flexibility;
- analytics and benchmarking;
- speed and performance required to enable customers to access clinical trial data in real-time;

- product reliability and scalability;
- infrastructure accessibility and security;
- regulatory compliance;
- financial stability;
- commercial and technology partnerships;
- depth of expertise and quality of our professional services and customer support on a global basis; and
- sales and marketing capabilities, including the ability to create and communicate operational value.

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Although some of our competitors and potential competitors have greater name recognition, longer operating histories, more product offerings and greater financial, technological and other resources than we do, we believe that we compete favorably with our competitors on the basis of these factors.

Government Regulation

The use of our software products, services and hosted solutions by customers engaged in clinical trials must be done in a manner that is compliant with a complex array of United States federal and state laws and regulations, including regulation by the United States Food and Drug Administration, or FDA, as well as regulations and guidance issued by foreign governments and international non-governmental organizations. Our applications have been designed to allow our customers to deploy such clinical trials as part of a validated system, compliant with applicable laws and regulations.

Regulation of Clinical Trials and Electronic Systems Used in Clinical Trials

The conduct of clinical trials is subject to regulation and regulatory guidance associated with the approval of new drugs, biological products and medical devices imposed upon the clinical trial process by the FDA, foreign governmental regulatory agencies and international non-governmental organizations, such as the International Conference on Harmonisation, or ICH, and the World Health Organization, or WHO.

The laws, regulations and guidance from various countries and regions are often, but not always, harmonized. In those areas which are not yet harmonized, conflicting or even contradictory requirements may exist. Further, the regulatory environment and requirements for clinical trials and drug/biologic/device approvals are undergoing rapid change in the United States, the European Union and in other regions. We continue to monitor regulatory developments and industry best practices in these areas and make changes and introduce improvements as necessary to remain in compliance.

The use of our solutions and services by customers engaged in clinical trials must be done in a manner that is compliant with these laws, regulations and guidance. Failure to do so could, for example, have an adverse impact on a clinical trial sponsor’s ability to obtain regulatory approval of new drugs, biological products or medical devices or even to continue a clinical trial.

The use of software during the clinical trial process must adhere to the regulations and regulatory guidance known as Good Clinical Practices, or GCPs, other various codified practices such as the Consolidated Guidance for Industry from the International Conference on Harmonisation Regarding Good Clinical Practices for Europe, Japan and the United States and other guidance documents. In addition to these regulations and regulatory guidance, the FDA and other countries have developed regulations and regulatory guidance concerning electronic records and electronic signatures. In the United States, these regulations are interpreted for clinical trials in a guidance document titled FDA Computerized Systems Used in Clinical Investigations—Guidance for Industry. In general, regulatory guidance stipulates that computerized systems used to capture or manage clinical trial data must meet certain standards for attributability, accuracy, retrievability, traceability, inspectability, validity, security and dependability. If we or our customers violate the GCPs or other regulatory requirements, both parties run the risk that the violation will result in a regulatory citation, the suspension of the clinical trial, investigator disqualification, debarment, the rejection or withdrawal of a product marketing application, criminal prosecution or civil penalties. Such risks not only impact our customers, but could also have a material adverse effect on our business, results of operations or financial condition.

Regulation of Health Information

Government regulation of the use and disclosure of patient privacy and data protection imposes a number of requirements. In the United States, regulations issued pursuant to the Health Insurance Portability and Accountability Act of 1996, or HIPAA, require certain “covered entities,” including facilities and providers that are involved in clinical trials, to comply with established standards regarding the privacy and security of protected health information and to use standardized code sets when conducting certain electronic transactions. The regulations also require “business associates” that provide services on behalf of the covered entity to follow the same standards. Although we are not a “covered entity” or a “business associate” and therefore technically are not subject to HIPAA regulations, many users of our products and services are directly regulated under HIPAA and our products cannot be utilized in a manner that is inconsistent with the users’ HIPAA compliance requirements. In addition, to the extent we perform functions or activities on behalf of customers that are directly regulated by such health-related privacy laws, we may be required to

comply with a number of the same HIPAA requirements. The breach of such requirements on our part may result in liability to our customers and us. In addition to HIPAA, most states within the United States have enacted or are considering their own privacy and data protection laws. Such state laws, if more stringent than HIPAA requirements, are not preempted by the federal requirements and we must comply with them as well.

In addition to complying with the privacy laws of the United States, many foreign governments have data privacy protection laws that include additional protections for sensitive patient information, such as confidential medical records. Because we provide services in many of these countries, we must meet these requirements and must provide our services in a manner that supports our customers' compliance obligations.

Intellectual Property

Our success and ability to compete are dependent on our ability to develop and maintain the proprietary aspects of our technology and operate without infringing the proprietary rights of others. We rely upon a combination of trademark, trade secret, copyright, patent and unfair competition laws, as well as license agreements and other contractual provisions, to protect our intellectual property and other proprietary rights. In addition, we attempt to protect our intellectual property and proprietary information by requiring

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our employees and consultants to enter into confidentiality, non-competition and assignment of inventions agreements. We have registered trademarks and service marks in the United States and abroad, and filed applications for the registration of additional trademarks and service marks. Our principal trademarks are “Medidata,” "Medidata Clinical Cloud," "Medidata Patient Cloud," “Medidata CRO Contractor,” “Medidata Designer,” “Medidata Grants Manager,” “Medidata Rave,” "Medidata Balance," "Medidata Coder," and "Medidata Insights." We also hold several domain names, including the domain names “mdsol.com” and “medidatasolutions.com.” Although we do not rely heavily on patent protection, we hold seven patents and have six published patent applications outstanding with the U.S. Patent and Trademark Office, or PTO, as well as certain corresponding foreign patents and/or patent applications.

The legal protections described above afford only limited protection for our technology. Due to rapid technological change, we believe that factors such as the technological and creative skills of our personnel, new product and service developments and enhancements to existing products and services are more important than the various legal protections of our technology to establishing and maintaining a technology leadership position.

In addition, if any of our software solutions is covered by third-party patents or other intellectual property rights, we could be subject to infringement actions. For example, in December 2011 we settled a lawsuit filed against us by Datasci, LLC, or Datasci. In addition, in March 2011, we were named in a separate complaint for patent infringement filed by DataTrak International, Inc., or DataTrak. See Note 15, “Commitments and Contingencies—Legal Matters,” to the consolidated financial statements included in Item 15 of this Annual Report on Form 10-K for full descriptions. We cannot assure you that our software solutions and the technologies used in our product offerings do not infringe patents held by others or that they will not in the future. Any future claim of infringement could cause us to incur substantial costs defending against the claim, even if the claim is without merit, and could distract our management from our business. Moreover, any settlement or adverse judgment resulting from the claim could require us to pay substantial amounts or obtain a license to continue to use the technology that is the subject of the claim, or otherwise restrict or prohibit our use of the technology. Any required licenses may not be available to us on acceptable terms, if at all. If we do not obtain any required licensees, we could encounter delays in product introductions if we attempt to design around the technology at issue or attempt to find another provider of suitable alternative technology to permit us to continue offering the applicable software solution. In addition, we generally provide in our customer agreements that we will indemnify our customers against third-party infringement claims relating to our technology provided to the customer, which could obligate us to fund significant amounts. Infringement claims asserted against us or our customers or other third parties that we are required or otherwise agree to indemnify may have a material adverse effect on our business, results of operations or financial condition.

Employees

As of December 31, 2013, we had a total of 923 employees, of which 309 were employed at our headquarters in New York, 420 at other locations in the United States, 131 in the United Kingdom and 63 in Japan. As of December 31, 2013, we had 292 employees in customer services and support, 28 employees in data operations, 296 employees in research and development, 180 employees in sales and marketing and 127 employees in administration and executive management. We also retain additional outside contractors from time to time to supplement our services and research and development staff on an as-needed basis. As of December 31, 2013, we had 125 independent contractors, the majority of which have been engaged in connection with help desk and customer service functions. None of our employees are covered by a collective bargaining agreement. We consider our relationships with our employees to be good.

Available Information

We were organized as a New York corporation in June 1999 and reincorporated in the State of Delaware in May 2000. Our principal executive offices are located at 350 Hudson Street, 9th Floor, New York, New York 10014, and our telephone number is (212) 918-1800. Our website is located at www.mdsol.com. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act, as well as reports relating to our securities filed by others pursuant to Section 16 of such act, are available through the investor relations page of our internet website free of charge as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission, or SEC. The SEC maintains an internet site that contains reports, proxy and information

statements, and other information regarding issuers that file electronically with the SEC. The address of that site is www.sec.gov.

Item 1A. Risk Factors

We operate in a rapidly changing environment that involves a number of risks, some of which are beyond our control. The risks described below are those which we believe are the material risks we face. Any of the risk factors described below or additional risks and uncertainties not presently known to us, or that we currently deem immaterial, could have a material adverse effect on our business, financial condition and results of operations.

Risks Related to Our Business

Our quarterly and annual operating results fluctuate and may continue to fluctuate in the future, and if we fail to meet the expectations of analysts or investors, our stock price and the value of your investment could decline substantially.

Our quarterly and annual revenues and operating results have varied in the past and may vary significantly in the future depending on factors such as:

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- budgeting cycles of our customers;
- the length of our sales cycle;
- increased competition;
- our ability to develop innovative products;
- the timing of new product releases by us or our competitors;
- market acceptance of our products;
- changes in our and our competitors' pricing policies;
- the financial condition of our current and potential customers;
- changes in the regulatory environment;
- changes in operating expenses and personnel changes;
- our ability to hire and retain qualified personnel;
- the effect of potential acquisitions and consequent integration;
- changes in our business strategy; and
- general economic factors, including factors relating to disruptions in the world credit and equity markets and the related impact on our customers' access to capital.

Our future growth is dependent on the successful development and introduction of new products and enhancements. There can be no assurance that we will be successful in developing and marketing, on a timely basis, new products or product enhancements, that our new products will adequately address the changing needs of the marketplace or that we will successfully manage the transition from existing technologies. Certain of these products require a higher level of sales and support expertise. The ability of our sales channel to obtain this expertise and to sell the new product offerings effectively could have an adverse impact on our sales and financial results in future periods. Any of these scenarios may result in the loss of or delay in customer acceptance, diversion of development resources, damage to our reputation, or increased service and warranty costs, any of which could have a material adverse effect on our business, financial position, results of operations and cash flows.

In addition, a significant portion of our operating expenses is relatively fixed and planned expenditures are based in part on expectations regarding future revenues. Accordingly, unexpected revenue shortfalls may decrease our gross margins and could cause significant changes in our operating results from quarter to quarter. As a result, in future quarters our operating results could fall below the expectations of securities analysts or investors, in which event our stock price would likely decrease.

We derive a significant percentage of our revenues from a concentrated group of customers and the loss of one or more major customers could materially and adversely affect our business, results of operations or financial condition. Our top five customers accounted for approximately 29%, 29% and 31% of our revenues in 2013, 2012 and 2011, respectively. In 2013, 2012 and 2011, no single customer accounted for 10% or more of our total revenues. The loss of any of our major customers could have a material adverse effect on our results of operations and financial condition. We may not be able to maintain our customer relationships, and our customers may delay performance under or fail to renew their agreements with us, which could adversely affect our business, results of operations or financial condition. Any reduction in the amount of revenues that we derive from these customers, without an offsetting increase in new sales to other customers, could have a material adverse effect on our operating results. A significant change in the liquidity or financial position of any of these customers could also have a material adverse effect on the collectability of our accounts receivable, our liquidity and our future operating results.

If our customers cancel their contracts or terminate or delay their clinical trials, we may lose or delay revenues and our business may be harmed.

Certain of our customer contracts are subject to cancellation by our customers at any time with limited notice. Customers engaged in clinical trials may terminate or delay a clinical trial for various reasons, including the failure of the tested product to satisfy safety or efficacy requirements, unexpected or undesired clinical results, decisions to deemphasize a particular product or forgo a particular clinical trial, decisions to downsize clinical development programs, insufficient patient enrollment or investigator recruitment and production problems resulting in shortages of required clinical supplies. In the case of our cloud-based solutions and services, any termination or delay in the clinical trials would likely result in a consequential delay or termination in those customers' service contracts. We have

experienced terminations and delays of our customer service contracts in the past (although no such past terminations have had a significant impact on our results of operations) and we expect to experience additional terminations and delays in the future. The termination of a single-study arrangement could result in decreased revenues and the delay of our customers' clinical trials could result in delayed professional services revenues, which could materially harm our business.

As our focus turns to selling additional cloud-based solutions and services to enterprise customers, our sales cycle may become more time-consuming and expensive, and we may experience resistance to our pricing strategy and implementation challenges, which could harm our business and operating results.

Our future success depends in part on our ability to sell additional cloud-based solutions and services to our current customers. This may also require increasingly sophisticated and costly sales efforts that are targeted at senior management. Similarly, the rate at which our customers purchase new or enhanced services depends on a number of factors, including how our customers react to any price adjustments related to these additional solutions and services. If our efforts to upsell to our customers are not successful and negative reaction occurs, our growth prospects may suffer.

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As we target more of our platform sales efforts at larger enterprise customers, we will face greater costs, longer sales cycles and less predictability in our sales pipeline. The customer's decision to use our solutions and services may be an enterprise-wide decision and, if so, these types of sales would require us to provide greater levels of education regarding the use and benefits of our cloud-based solutions and services, as well as education regarding privacy and data protection laws and regulations to prospective customers. As a result of these factors, these sales opportunities may require us to devote greater sales support and professional services resources to individual customers, driving up costs and time required to complete sales and diverting our own sales and professional services resources to a smaller number of larger transactions.

If the market for some of our cloud-based solutions and services develops more slowly than we expect, our revenues may not grow to the extent or at the pace expected, and our business could be adversely affected.

The market for some cloud-based solutions and services is not as mature as the market for on-premise enterprise software in the life sciences industry, and it is uncertain how quickly and to what extent all of our cloud-based solutions will achieve and sustain high levels of customer demand and market acceptance in the life sciences industry. Our success will depend to a substantial extent on increasing adoption of cloud-based solutions in the life sciences industry. Some life sciences companies devote substantial resources to integrating traditional enterprise software into their businesses, and therefore may be slow to fully migrate to cloud-based solutions and services. The rate of expansion of cloud-based solutions and services in the life sciences industry depends on a number of factors, including the cost, performance and perceived value associated with cloud-based solutions, as well as the ability of providers of cloud-based solutions to address security, privacy and unique regulatory requirements or concerns. If we or other cloud-based solution providers experience security incidents, loss of customer data, disruptions in delivery or other problems, the market for cloud-based solutions in the life sciences industry, including our solutions, may be adversely affected. If there is a reduction in demand for cloud-based solutions caused by technological challenges, weakening economic conditions, security or privacy concerns, competing technologies and products, decreases in corporate spending or otherwise, our revenues could decrease and our business could be adversely affected.

If our security is breached, our business could be disrupted, our operating results could be harmed, and customers could be deterred from using our products and services.

Our business relies on the secure electronic transmission, storage, and hosting of sensitive information, including clinical data, financial information, and other sensitive information relating to our customers, company and workforce. As a result, we face some risk of a deliberate or unintentional incident involving unauthorized access to our computer systems that could result in misappropriation or loss of assets or sensitive information, data corruption, or other disruption of business operations. In light of this risk, we have devoted significant resources to protecting and maintaining the confidentiality of our information, including implementing security and privacy programs and controls, training our workforce, and implementing new technology. We have no guarantee that these programs and controls will be adequate to prevent all possible security threats. We believe that any compromise of our electronic systems, including the unauthorized access, use, or disclosure of sensitive information or a significant disruption of our computing assets and networks, would adversely affect our reputation and our ability to fulfill contractual obligations, and would require us to devote significant financial and other resources to mitigate such problems, and could increase our future cyber security costs. Moreover, unauthorized access, use, or disclosure of such sensitive information could result in contractual or other liability. In addition, any real or perceived compromise of our security or disclosure of sensitive information may result in lost revenues by deterring customers from using or purchasing our products and services in the future or prompting them to use competing service providers.

Any failure by us to properly protect customer data, including any personal health information we possess or are deemed to possess in connection with the conduct of clinical trials, could subject us to significant liability.

Our customers use our solutions to collect, manage and report information in connection with the conduct of clinical trials. This information may be considered our customers' proprietary information or personal health information of the clinical trial participants or patients. Regulation related to the use and disclosure of personal health information continues to expand in scope and complexity. Increased focus on individuals' rights to confidentiality of their personal information, including personal health information, could lead to an increase in existing and future legislative or regulatory initiatives giving direct legal remedies to individuals, including rights to damages, against entities deemed

responsible for not adequately securing such personal information. In addition, courts may look to regulatory standards in identifying or applying a common law theory of liability, whether or not that law affords a private right of action. Since we receive and process our customers' data or personal information of clinical trial participants and patients from customers utilizing our hosted solutions, there is a risk that we could be liable if there were a breach of any obligation to a protected person under contract, standard of practice or regulatory requirement. If we fail to properly protect our customers' data or personal information that is in our possession or deemed to be in our possession, we could be subjected to significant liability and our reputation would be harmed.

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We rely upon a single internal hosting facility and Amazon Web Services to deliver our solutions to our customers and any disruption of or interference with our hosting systems, operations, or use of the Amazon Web Services would harm our business and results of operations.

Substantially all of the computer hardware necessary to deliver our solutions is located at our internal hosting facility in Houston, Texas. Our systems and operations could suffer damage or interruption from human error, fire, flood, power loss, telecommunications failure, break-ins, terrorist attacks, acts of war and similar events. The occurrence of a natural disaster, an act of terrorism or other unanticipated problems at our hosting facility could result in lengthy interruptions in our service. In addition to our own dedicated hosting facility, we utilize third-party cloud computing services from Amazon Web Services, or AWS, to help us efficiently scale our cloud-based solutions. We have architected some of our cloud-based solutions so as to utilize data processing, storage capabilities and other services provided by AWS. Although we maintain backup facilities and disaster recovery services in the event of a system failure, these may be insufficient or fail. Any system failure, including network, software or hardware failure, that causes an interruption in our Houston data center or our use of AWS or a decrease in responsiveness of our cloud-based solutions could damage our reputation and cause us to lose customers, which would harm our business and results of operations. Our business may be harmed if our customers and potential customers believe our service is unreliable.

Defects or errors in our cloud-based solutions could harm our reputation, result in significant cost to us and impair our ability to market our solutions.

The software applications underlying our cloud-based solutions and services, including Medidata Rave, are inherently complex and may contain defects or errors, some of which may be material. Errors may result from our own technology or from the interface of our cloud-based solutions with legacy systems and data, which we did not develop. The risk of errors is particularly significant when a new product is first introduced or when new versions or enhancements of existing products are released. The likelihood of errors is increased as a result of our commitment to frequent release of new products and enhancements of existing products.

We have, from time to time, found defects in our solutions. Although these past defects have not resulted in any litigation against us to date, we have invested significant capital, technical, managerial and other resources to investigate and correct these past defects and we have needed to divert these resources from other development efforts. In addition, material performance problems or defects in our solutions may arise in the future. Material defects in our cloud-based solutions could result in a reduction in sales, delay in market acceptance of our solutions or credits or refunds to our customers. In addition, such defects may lead to the loss of existing customers and difficulty in attracting new customers, diversion of development resources or harm to our reputation.

Correction of defects or errors could prove to be impossible or impractical. The costs incurred in correcting any defects or errors or in responding to resulting claims or liability may be substantial and could adversely affect our operating results.

If we are not able to reliably meet our data storage and management requirements, or if we experience any failure or interruption in the delivery of our services over the Internet, customer satisfaction and our reputation could be harmed and customer contracts may be terminated.

As part of our current business model, we store and manage hundreds of terabytes of data for our customers, resulting in substantial information technology infrastructure and ongoing technological challenges, which we expect to continue to increase over time. If we do not reliably meet these data storage and management requirements, or if we experience any failure or interruption in the delivery of our services over the Internet, customer satisfaction and our reputation could be harmed, leading to reduced revenues and increased expenses. Our hosting services are subject to service level agreements and, in the event that we fail to meet guaranteed service or performance levels, we could be subject to customer credits or termination of these customer contracts. If the cost of meeting these data storage and management requirements increases, our results of operations could be harmed.

We may expand our business through new acquisitions in the future. Any such acquisitions could disrupt our business, harm our financial condition and dilute current stockholders' ownership interests in our company.

We intend to pursue potential acquisitions of and investments in businesses, technologies, or products complementary to our business and periodically engage in discussions regarding such possible acquisitions. For example, we acquired

Fast Track Systems, Inc., or Fast Track, in March 2008 and Clinical Force Limited, or Clinical Force, in July 2011. Acquisitions involve numerous risks, including some or all of the following:

- difficulties in identifying and acquiring complementary products, technologies or businesses;
- substantial cash expenditures;
- incurrence of debt and contingent liabilities, some of which we may not identify at the time of acquisition;
- difficulties in assimilating the operations and personnel of the acquired companies;
- diversion of management's attention away from other business concerns;
- risk associated with entering markets in which we have limited or no direct experience;
- potential loss of key employees, customers and strategic alliances from either our current business or the target company's business; and
- delays in customer purchases due to uncertainty and the inability to maintain relationships with customers of the acquired businesses.

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If we fail to properly evaluate acquisitions or investments, we may not achieve the anticipated benefits of such acquisitions, we may incur costs in excess of what we anticipate, and management resources and attention may be diverted from other necessary or valuable activities. An acquisition may not result in short-term or long-term benefits to us. The failure to evaluate and execute acquisitions or investments successfully or otherwise adequately address these risks could materially harm our business and financial results. We may incorrectly judge the value or worth of an acquired company or business. In addition, our future success will depend in part on our ability to manage the growth anticipated with these acquisitions.

Furthermore, the development or expansion of our business or any acquired business or companies may require a substantial capital investment by us. We may not have these necessary funds or they might not be available to us on acceptable terms or at all. We may also seek to raise funds for an acquisition by issuing equity securities or convertible debt, as a result of which our existing stockholders may be diluted or the market price of our stock may be adversely affected.

Our revenues derived from international operations are subject to risk, including risks relating to unfavorable economic, political, legal, regulatory, tax, labor and trade conditions in the foreign countries in which we operate, that could have a material adverse effect on our results of operations.

Approximately 29%, 33% and 36% of our revenues in each of the years ended December 31, 2013, 2012 and 2011, respectively, were derived from international operations. We expect that international customers will continue to account for a substantial percentage of our revenues.

International operations are subject to inherent risks. These risks include:

- the economic conditions in these various foreign countries and their trading partners, including conditions resulting from disruptions in the world credit and equity markets;
- political instability;
- longer payment cycles;
- greater difficulty in accounts receivable collection and enforcement of agreements;
- compliance with foreign laws;
- data privacy laws which require that customer data be stored and processed in a designated territory;
- changes in regulatory requirements;
- fewer legal protections for intellectual property and contract rights;
- tariffs or other trade barriers;
- difficulties in obtaining export licenses;
- staffing and managing foreign operations;
- exposure to currency exchange and interest rate fluctuations;
- transportation delays; and
- potentially adverse tax consequences.

Moreover, with regard to our international operations, we frequently enter into transactions in currencies other than the U.S. dollar and we incur operating expenses in currencies other than the U.S. dollar. For the years ended December 31, 2013, 2012 and 2011, approximately 4.3%, 5.1% and 5.9%, respectively, of our revenues were denominated in foreign currencies. This creates a foreign currency exchange risk that could have a material adverse effect on our business, results of operations and financial condition.

We rely on third parties for our help desk support and technology partnerships, and our business may suffer if these relationships do not continue.

We currently outsource our help desk support functions, which involve important direct interactions with users of our products. In the event that our vendor becomes unable or unwilling to provide these services to us, we are not equipped to provide the necessary range of help desk support and service functions to our customers. We also work with third-party software companies to allow our cloud-based platform to interface with their products. If we are unable to develop and maintain effective relationships with appropriate technology partners, or if such companies adopt more restrictive policies with respect to, or impose unfavorable terms and conditions on, access to their products, we may not be able to continue to provide our customers with certain platform infrastructure, which could reduce our sales and adversely affect our business, operating results and financial condition.

We rely on third-party software-as-a-service vendors in connection with numerous critical functions of our business, which presents risks that, if realized, could adversely affect our business operations and financial results.

We currently rely on third-party software-as-a-service vendors in connection with many critical functions of our business, including enterprise resource planning services and customer relationship management services, enterprise cloud applications for human resources and electronic communication services. Further, some of our cloud-based solutions are hosted by Amazon Web Services. If any of these services fail or become unavailable due to extended outages or interruptions, or the security of our data stored with the vendors is compromised, or our own access to our data stored with the vendors is restricted or terminated, or the cloud-based services we use are no longer available on commercially reasonable terms or prices, our revenue could be reduced, our reputation could be damaged, expenses could increase, our ability to manage our finances, sales opportunities and workforce could be interrupted and our processes for delivering services and supporting our customers could be impaired until equivalent services are identified, obtained and implemented, all of which could adversely affect our business.

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We have been, and may continue to be, subject to claims that we or our technologies infringe upon the intellectual property or other proprietary rights of a third party. Any such claims may require us to incur significant costs, to enter into royalty or licensing agreements or to develop or license substitute technology.

We have been, and may in the future be, subject to claims that our technologies infringe upon the intellectual property or other proprietary rights of a third party. For example, in December 2011 we settled a lawsuit filed against us by Datasci. In addition, in March 2011, we were named in a separate complaint for patent infringement filed by DataTrak. See Note 15, “Commitments and Contingencies—Legal Matters,” to the consolidated financial statements included in Item 15 of this Annual Report on Form 10-K for full descriptions.

We cannot assure you that our cloud-based solutions and the technologies used in our product offerings do not infringe patents held by others or that they will not so infringe in the future. Any future claim of infringement could cause us to incur substantial costs defending against the claim, even if the claim is without merit, and could distract our management from our business. Moreover, any settlement or adverse judgment resulting from the claim could require us to pay substantial amounts or obtain a license to continue to use the technology that is the subject of the claim, or otherwise restrict or prohibit our use of the technology. Any required licenses may not be available to us on acceptable terms, if at all. If we do not obtain any required licenses, we could encounter delays in product introductions if we attempt to design around the technology at issue or attempt to find another provider of suitable alternative technology to permit us to continue offering the applicable solution. In addition, we generally provide in our customer agreements that we will indemnify our customers against third-party infringement claims relating to our technology provided to the customer, which could obligate us to fund significant amounts. Infringement claims asserted against us or against our customers or other third parties that we are required or otherwise agree to indemnify may have a material adverse effect on our business, results of operations or financial condition.

We may be unable to adequately enforce or defend our ownership and use of our intellectual property and other proprietary rights.

Our success is heavily dependent upon our intellectual property and other proprietary rights. We rely upon a combination of trademark, trade secret, copyright, patent and unfair competition laws, as well as license and access agreements and other contractual provisions, to protect our intellectual property and other proprietary rights. In addition, we attempt to protect our intellectual property and proprietary information by requiring certain of our employees and consultants to enter into confidentiality, non-competition and assignment of inventions agreements. The steps we take to protect these rights may not be adequate to prevent misappropriation of our technology by third parties or may not be adequate under the laws of some foreign countries, which may not protect our intellectual property rights to the same extent as do the laws of the United States.

Our attempts to protect our intellectual property may be challenged by others or invalidated through administrative process or litigation, and agreement terms that address non-competition are difficult to enforce in many jurisdictions and may not be enforceable in any particular case. Moreover, the degree of future protection of our intellectual property and proprietary rights is uncertain for products that are currently in the early stages of development because we cannot predict which of these products will ultimately reach the commercial market or whether the commercial versions of these products will incorporate proprietary technologies. In addition, there remains the possibility that others will “reverse engineer” our products in order to determine their method of operation and introduce competing products or that others will develop competing technology independently.

If we resort to legal proceedings to enforce our intellectual property rights or to determine the validity and scope of the intellectual property or other proprietary rights of others, the proceedings could be burdensome and expensive, even if we were to prevail. The failure to adequately protect our intellectual property and other proprietary rights may have a material adverse effect on our business, results of operations or financial condition.

Our cloud-based solutions and services utilize open source software, and any failure to comply with the terms of one or more of these open source licenses could adversely affect our business.

Our cloud-based solutions utilize software covered by open source licenses. Open source software is typically freely accessible, usable and modifiable, and is used by our development team in an effort to reduce development costs and speed up the development process. Certain open source software licenses require a user who intends to distribute the open source software as a component of the user's software to disclose publicly part or all of the source code to the

user's software. In addition, certain open source software licenses require the user of such software to make any derivative works of the open source code available to others on unfavorable terms or at no cost. This can subject previously proprietary software to open source license terms. While we monitor the use of all open source software in our products, processes and technology and try to ensure that no open source software is used in such a way as to require us to disclose the source code to the related product or solution, such use could inadvertently occur. This could harm our intellectual property position and have a material adverse effect on our business.

We could incur substantial costs resulting from product liability claims relating to our products or services or our customers' use of our products or services.

Any failure or errors in a customer's clinical trial caused or allegedly caused by our products or services could result in a claim for substantial damages against us by our customers or the clinical trial participants, regardless of our responsibility for the failure. Although we are generally entitled to indemnification under our customer contracts against claims brought against us by third parties arising out of our customers' use of our products, we might find ourselves entangled in lawsuits against us that, even if unsuccessful,

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may divert our resources and energy and adversely affect our business. Further, in the event we seek indemnification from a customer, a court may not enforce our indemnification right if the customer challenges it or the customer may not be able to fund any amounts for indemnification owed to us. In addition, our existing insurance coverage may not continue to be available on reasonable terms or may not be available in amounts sufficient to cover one or more large claims, or the insurer may disclaim coverage as to any future claim.

Current and future litigation against us, which may arise in the ordinary course of our business, could be costly and time consuming to defend.

We are from time to time subject to legal proceedings and claims that arise in the ordinary course of business, such as claims brought by our customers in connection with commercial disputes and employment claims made by our current or former employees. From time to time, third parties have asserted and may in the future assert intellectual property rights to technologies that are important to our business and have demanded and may in the future demand that we license their technology. For example, in December 2011 we settled a lawsuit filed against us by Datasci. In addition, in March 2011, we were named in a separate complaint for patent infringement filed by DataTrak. See Note 15, "Commitments and Contingencies—Legal Matters," to the consolidated financial statements included in Item 15 of this Annual Report on Form 10-K for full descriptions. Litigation may result in substantial costs and may divert management's attention and resources, which may seriously harm our business, overall financial condition and operating results. Insurance may not cover such claims, may not be sufficient for one or more such claims and may not continue to be available on terms acceptable to us. A claim brought against us that is uninsured or underinsured could result in unanticipated costs, thereby reducing our operating results and leading analysts or potential investors to reduce their expectations of our performance, resulting in a reduction in the trading price of our stock.

Our contracts with the U.S. government are subject to termination rights and other risks that could adversely affect us.

Because our U.S. government contracts and subcontracts are generally subject to procurement laws and regulations, we may not receive all of the future revenues we anticipate receiving under those contracts and subcontracts in the expected periods. Some of our government contracts are governed by the Federal Acquisition Regulation, or FAR, which includes uniform policies and procedures for acquiring goods and services by the U.S. government. The FAR also contains guidelines and regulations for managing a contract after an award, including conditions under which contracts may be terminated, in whole or in part, at the government's convenience. These regulations also subject us to financial audits and other reviews by the government of our costs, performance, accounting and general business practices relating to our government contracts, which may result in adjustment of our contract-related costs and fees. In December 2010, the U.S. government terminated for convenience a contract previously awarded to us on behalf of the U.S. National Institute of Health's National Cancer Institute, or NCI. Any such future procurement actions by other government customers are subject to risks and uncertainties, which could affect the allocation, timing, schedule and scope of our government contracts and subcontracts.

Risks Related to Our Industry

We face significant competition, which could cause us to lose business or achieve lower margins.

The market for our clinical trial solutions is intensely competitive and characterized by rapidly changing technologies, evolving industry standards and frequent new product and service introductions and enhancements that may render existing products and services obsolete. Accordingly, our market share and margins are subject to sudden declines. Some of our competitors have longer operating histories, greater financial, technical, marketing and other resources and greater name recognition than we do. These competitors may respond more quickly than we can to new and emerging technologies and changing customer and regulatory requirements, or devote greater resources to the development, promotion and sale of their solutions. We anticipate that new competitors will enter our market in the future, as barriers to entry are relatively low in our industry. Increased competition is likely to result in pricing pressures, which could negatively impact our sales, gross margins or market share. In addition, current and potential competitors have established, and may in the future establish, relationships with vendors of complementary products, technologies or services to increase the penetration of their products in the marketplace. Even if our products and services are more effective than the products or service offerings of our competitors, current or potential customers might accept competitive products and services in lieu of purchasing our cloud-based solutions and services. Our failure to compete effectively could materially adversely affect our business, financial condition or results of

operations.

We depend entirely on the clinical trial market, and a downturn in this market could cause our revenues to decrease. Our business depends entirely on the clinical trials conducted or sponsored by pharmaceutical, biotechnology and medical device companies, CROs and other entities. Our revenues may decline as a result of conditions affecting these industries, including general economic downturns, increased consolidation, decreased competition or fewer products under development. Other developments that may affect these industries and harm our operating results include product liability claims, changes in government regulation, changes in governmental price controls or third-party reimbursement practices and changes in medical practices. Disruptions in the world credit and equity markets may also result in a global downturn in spending on research and development and clinical trials and may impact our customers' access to capital and their ability to pay for our solutions. Any decrease in research and development expenditures or in the size, scope or frequency of clinical trials could materially adversely affect our business, results of operations or financial condition.

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Extensive governmental regulation of the clinical trial process and our products and services could require significant compliance costs and have a material adverse effect on the demand for our solutions.

The clinical trial process is subject to extensive and strict regulation by the FDA and other regulatory authorities worldwide. Our cloud-based solutions and services are also subject to state, federal and foreign regulations. Demand for our solutions is largely a function of such government regulation, which is generally increasing at the state and federal levels in the United States and elsewhere, and subject to change at any time. Changes in the level of regulation, including a relaxation in regulatory requirements or the introduction of simplified drug approval procedures, could have a material adverse effect on the demand for our solutions. For example, proposals to place caps on drug prices could limit the profitability of existing or planned drug development programs, making investment in new drugs and therapies less attractive to pharmaceutical companies. Similarly, the requirements in the United States, the European Union and elsewhere to create a detailed registry of all clinical trials could have an impact on customers' willingness to perform certain clinical studies. In addition, the uncertainty surrounding the possible adoption and impact on health care of any Good Clinical Practices reforms could cause our customers to delay planned research and development until some of these uncertainties are resolved. Until the new legislative agenda is finalized and enacted, it is not possible to determine the impact of any such changes.

Modifying our cloud-based solutions and services to comply with changes in regulations or regulatory guidance could require us to incur substantial costs. Further, changing regulatory requirements may render our solutions obsolete or make new products or services more costly or time consuming than we currently anticipate. Failure by us, our customers, or our competitors to comply with applicable regulations could result in increased regulatory scrutiny and enforcement. If our solutions fail to comply with government regulations or guidelines, we could incur significant liability or be forced to cease offering our applicable products or services. If our solutions fail to allow our customers to comply with applicable regulations or guidelines, customers may be unwilling to use our solutions and any such non-compliance could result in the termination of or additional costs arising from contracts with our customers.

Consolidation among our customers could cause us to lose customers, decrease the market for our products and result in a reduction of our revenues.

Our customer base could decline because of industry consolidation, and we may not be able to expand sales of our products and services to new customers. Consolidation in the pharmaceutical, biotechnology and medical device industries and among CROs has accelerated in recent years, and we expect this trend to continue. In addition, new companies or organizations that result from such consolidation may decide that our products and services are no longer needed because of their own internal processes or the use of alternative systems. As these entities consolidate, competition to provide products and services to industry participants will become more intense and the importance of establishing relationships with large industry participants will become greater. These industry participants may try to use their market power to negotiate price reductions for our products and services. Also, if consolidation of larger current customers occurs, the combined organization may represent a larger percentage of business for us and, as a result, we are likely to rely more significantly on the combined organization's revenues to continue to achieve growth.

Risks Related to Our Common Stock

The price of our common stock may fluctuate significantly, and you could lose all or part of your investment.

Shares of our common stock were sold in our initial public offering, or IPO, in June 2009 at a price of $7.00 per share (on a post-split basis), and our common stock has subsequently traded as high as $63.89 and as low as $6.68 from our IPO through December 31, 2013. However, an active, liquid and orderly market for our common stock on The NASDAQ Stock Market or otherwise may not be sustained, which could depress the trading price of our common stock. The trading price of our common stock may be subject to wide fluctuations in response to various factors, some of which are beyond our control, including

- our quarterly or annual earnings or those of other companies in our industry;
- announcements by us or our competitors of significant contracts or acquisitions;
- changes in accounting standards, policies, guidance, interpretations or principles;
- general economic and stock market conditions, including disruptions in the world credit and equity markets;
- the failure of securities analysts to cover our common stock or changes in financial estimates by analysts;
- future sales of our common stock; and

- the other factors described in these “Risk Factors.”

In recent years, the stock market in general, and the market for technology-related companies in particular, has experienced extreme price and volume fluctuations. This volatility has had a significant impact on the market price of securities issued by many companies, including companies in our industry. The price of our common stock could fluctuate based upon factors that have little to do with our performance, and these fluctuations could materially reduce our stock price.

In the past, some companies, including companies in our industry, have had volatile market prices for their securities and have had securities class action suits filed against them. The filing of a lawsuit against us, regardless of the outcome, could have a material adverse effect on our business, financial condition and results of operations, as it could result in substantial legal costs and a diversion of our management’s attention and resources.

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Our actual operating results may differ significantly from guidance provided by our management.

From time to time, we may release guidance in our earnings releases, earnings conference calls, or otherwise, regarding our future performance that represent our management's estimates as of the date of release. This guidance, which includes forward-looking statements, is based on projections prepared by our management. These projections are not prepared with a view toward compliance with published guidelines of the American Institute of Certified Public Accountants, and neither our registered public accountants nor any other independent expert or outside party compiles or examines the projections and, accordingly, no such person expresses any opinion or any other form of assurance with respect thereto.

Projections are based upon a number of assumptions and estimates that, while presented with numerical specificity, are inherently subject to significant business, economic and competitive uncertainties and contingencies, many of which are beyond our control and are based upon specific assumptions with respect to future business decisions, some of which will change. We generally state possible outcomes as high and low ranges which are intended to provide a sensitivity analysis as variables are changed but are not intended to represent that actual results could not fall outside of the suggested ranges. The principal reason that we release guidance is to provide a basis for our management to discuss our business outlook with analysts and investors. We do not accept any responsibility for any projections or reports published by analysts.

Guidance is necessarily speculative in nature, and it can be expected that some or all of the assumptions of the guidance furnished by us will not materialize or will vary significantly from actual results. Accordingly, our guidance is only an estimate of what management believes is realizable as of the date of release. Actual results will vary from our guidance and the variations may be material. In light of the foregoing, investors are urged not to rely upon, or otherwise consider, our guidance in making an investment decision in respect of our common stock. Any failure to successfully implement our operating strategy could result in the actual operating results being different from our guidance, and such differences may be adverse and material.

Provisions of Delaware law and our organizational documents may discourage takeovers and business combinations that our stockholders may consider in their best interests, which could negatively affect our stock price.

Provisions of Delaware law and our fourth amended and restated certificate of incorporation and amended and restated bylaws may have the effect of delaying or preventing a change in control of our company or deterring tender offers for our common stock that other stockholders may consider in their best interests.

Our fourth amended and restated certificate of incorporation authorizes us to issue up to 5,000,000 shares of preferred stock in one or more different series with terms to be fixed by our board of directors. Stockholder approval is not necessary to issue preferred stock in this manner. Issuance of these shares of preferred stock could have the effect of making it more difficult and more expensive for a person or group to acquire control of us, and could effectively be used as an anti-takeover device. Currently there are no shares of our preferred stock issued or outstanding.

Our bylaws provide for an advance notice procedure for stockholders to nominate director candidates for election or to bring business before an annual meeting of stockholders, including proposed nominations of persons for election to our board of directors, and require that special meetings of stockholders be called only by our chairman of the board, chief executive officer, president or the board pursuant to a resolution adopted by a majority of the board.

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

As a public company, we incur significant administrative workload and expenses.

As a public company with common stock listed on The NASDAQ Stock Market, we must comply with various laws, regulations and requirements, including certain provisions of the Sarbanes-Oxley Act of 2002 and the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, as well as rules implemented by the SEC and The NASDAQ Stock Market. Complying with these statutes, regulations and requirements, including our public company reporting requirements, continues to occupy a significant amount of the time of our board of directors and management and involves significant accounting, legal and other expenses. We have hired, and anticipate that we will

continue to hire, additional personnel to handle these responsibilities, which will increase our operating costs. Furthermore, these laws, regulations and requirements could make it more difficult or more costly for us to obtain certain types of insurance, including director and officer liability insurance, and we may be forced to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. The impact of these requirements could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors or board committees, or as executive officers.

New laws and regulations as well as changes to existing laws and regulations affecting public companies, including the provisions of the Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 and rules adopted by the SEC and by The NASDAQ Stock Market, would likely result in increased costs to us as we respond to their requirements. We are investing resources to comply with evolving laws and regulations, and this investment may result in increased general and administrative expenses and a diversion of management’s time and attention from revenue-generating activities to compliance activities.

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We do not currently intend to pay dividends on our common stock and, consequently, your ability to achieve a return on your investment will depend on appreciation in the price of our common stock.

We have never declared or paid any cash dividends on our common stock and do not intend to do so for the foreseeable future. We currently intend to invest our future earnings, if any, to fund our growth. Therefore, you are not likely to receive any dividends on your investment in our common stock for the foreseeable future and the success of an investment in shares of our common stock will depend upon any future appreciation in its value. Shares of our common stock may depreciate in value or may not appreciate in value.

We have indebtedness in the form of convertible senior notes, which could adversely affect our liquidity and impede our ability to raise additional capital.

In August, 2013, we completed an offering of $287.5 million aggregate principal amount of 1.00% convertible senior notes, or the Notes, due August 1, 2018. As a result of the Notes offering, we incurred $287.5 million principal amount of indebtedness, the principal amount of which we may be required to pay at maturity in 2018, or, upon the occurrence of a make-whole fundamental change (as defined in the indenture governing the Notes). There can be no assurance that we will be able to repay this indebtedness when due, or that we will be able to refinance this indebtedness on acceptable terms or at all. In addition, this indebtedness could, among other things:

- make it difficult for us to pay other obligations;
- make it difficult to obtain favorable terms for any necessary future financing for working capital, capital expenditures, debt services requirements, acquisitions and investments and other general corporate purposes;
- require us to dedicate a substantial portion of our cash flow from operations to service the indebtedness, reducing the amount of cash flow available for other purposes; and
- limit our flexibility in planning for and reacting to change in our business.

Conversion of the Notes may affect the price of our common stock and the value of the Notes.

Holders of the outstanding Notes will be able to convert them into our common stock under certain circumstances at any time prior to February 1, 2018. Upon conversion, holders of the Notes would receive cash, shares of common stock or a combination of cash and shares of common stock, at our election. Any sales in the public market of shares of common stock issued upon conversion of the Notes could decrease the trading price of our common stock and the value of the Notes.

The conversion provisions of the Notes require us to deliver cash and, in certain circumstances, common stock upon conversion and could dilute the ownership interests of stockholders.

Upon any conversion of some or all of the Notes, we intend to make cash payments up to the principal amount of the converted Notes. Additionally, our basic earnings per share would be expected to decrease to the extent we are required to issue shares upon conversion because such underlying shares would be included in the basic earnings per share calculation and the conversion would result in dilution to our stockholders. Any new issuance of equity securities, including the issuance of shares upon the conversion of the Notes, would dilute the interests of our then-existing stockholders, including holders who receive shares upon conversion of the Notes.

Item 1B. Unresolved Staff Comments

Not applicable.

Item 2. Properties

Our corporate headquarters and other material leased real property as of December 31, 2013 are shown in the following table. We do not own any real property.

Location	Use	Size	Expiration of Lease
New York, New York (1)	Corporate headquarters	127,019 square feet	April 2024
Edison, New Jersey	Office space	24,236 square feet	February 2016
Conshohocken, Pennsylvania	Office space	10,297 square feet	June 2016
Ross, California	Office space	3,866 square feet	December 2015
Houston, Texas	Data center and office space	11,367 square feet	December 2020
Hammersmith, United Kingdom	Office space	23,066 square feet	November 2022
Tokyo, Japan (2)	Current office space	5,336 square feet	March 2014

Tokyo, Japan	New office space	12,338 square feet	October 2023

(1) In December 2013, we amended the lease agreement for our corporate headquarters in New York city to expand our office space by an additional floor in the same building. We expect to take possession of this additional floor in April 2014.

(2) The lease expiration date is expected to be March 2014 as this is when we expect to complete the move to our new Tokyo office. We currently lease on a month-to-month basis at our existing office and will vacate these premises upon moving to the new office.

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We believe these facilities and additional or alternative space available to us will be adequate to meet our needs for the foreseeable future.

Item 3. Legal Proceedings

See Note 15, “Commitments and Contingencies—Legal Matters,” to the consolidated financial statements included in Item 15 of this Annual Report on Form 10-K for a description of current legal proceedings.

Item 4. Mine Safety Disclosures

Not applicable.

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PART II

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

Stock Market Information

Our common stock has been traded on The NASDAQ Global Market under the symbol “MDSO” since the completion of our IPO in June 2009. Before then, there was no public market for our common stock.

In December 2013, we announced a two-for-one split of our common stock, effected in the form of a stock dividend. The record date for the stock split was December 2, 2013, and the additional shares were distributed on December 16, 2013. Each shareholder of record as of the close of business on the record date received one additional share of common stock for each share held.

The following table sets forth, for the periods indicated, the split-adjusted high and low sales prices of our common stock as reported by The NASDAQ Global Market:

	2013		2012	
	High	Low	High	Low
Fourth Quarter	$63.89	$42.28	$21.90	$15.65
Third Quarter	51.50	36.53	20.84	15.09
Second Quarter	39.11	26.51	16.38	12.23
First Quarter	29.01	20.00	13.98	9.07

Holders

On February 18, 2014, we had approximately 96 holders of record of our common stock. The number of record holders was determined from the records of our transfer agent and does not include beneficial owners of common stock whose shares are held in the names of various security brokers, dealers, and registered clearing agencies. The transfer agent of our common stock is American Stock Transfer & Trust Company, 6201 15th Avenue, Brooklyn, New York 11219.

Dividends

We paid accumulated accrued dividends on our convertible redeemable preferred stock of approximately $2.3 million in cash immediately prior to the conversion of all our redeemable preferred stock into shares of our common stock upon completion of the IPO in June 2009. Except for these dividends, we have never declared or paid any cash dividends on our capital stock. We currently expect to retain any future earnings for use in the operation and expansion of our business and do not anticipate paying any cash dividends on our common stock. Any future determination to pay dividends on our common stock will be at the discretion of our board of directors and will depend on our financial condition, results of operations, capital requirements and other factors that our board of directors considers relevant.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

From time to time, we grant nonvested restricted stock awards or performance-based restricted stock units to our employees pursuant to the terms of our Amended and Restated 2009 Long-Term Incentive Plan, or 2009 Plan. Under the provisions of our 2009 Plan, the plan participants are allowed to cover their income tax withholding obligation through net shares upon the vesting of their restricted shares or units. On the date of vesting, we determine the number of vested shares to be withheld, based on their fair value at the closing price of our common stock on the vesting date, in order to equal the amount of the plan participant's income tax withholding obligation.

A summary of our repurchases of shares of our common stock for the three months ended December 31, 2013 is as follows:

	Total Number of Shares Purchased (1)	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number of Shares that May Yet be Purchased under the Plans or Programs

October 1 – October 31, 2013	—	$—	—	—
November 1 – November 30, 2013	—	—	—	—
December 1– December 31, 2013	164,613	60.50	—	—
Total	164,613	$60.50	—	—

(1) Represents the number of shares acquired as payment by employees of applicable statutory minimum withholding taxes owed upon vesting of restricted stock awards or performance-based restricted stock units granted under our 2009 Plan.

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Stock Performance Graph

The following graph sets forth the total cumulative stockholder return on our common stock since our common stock began trading on the NASDAQ Global Market on June 25, 2009 as compared to the NASDAQ Composite Index and the NASDAQ Computer Index over the same period. This graph assumes a $100 investment in our common stock at $8.50 (on a post-split basis), which was the adjusted closing market price per share on the first day of trading. The comparison in the graphs below are based upon historical stock performance and not indicative of, nor intended to forecast, future performance of our common stock.

	Medidata Solutions Inc.	NASDAQ Composite Index	NASDAQ Computer Index
6/25/2009	$100.00	$100.00	$100.00
6/30/2009	96.35	100.30	100.49
12/31/2009	91.88	124.03	132.01
6/30/2010	91.12	115.29	120.20
12/31/2010	140.47	145.00	155.04
6/30/2011	140.41	151.60	157.63
12/31/2011	127.94	142.39	155.79
6/30/2012	192.18	160.43	178.55
12/31/2012	230.47	165.04	175.23
6/30/2013	455.53	186.02	182.54
12/31/2013	711.76	228.29	231.21

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Item 6. Selected Financial Data

Our selected consolidated financial information presented for each of the years ended December 31, 2013, 2012 and 2011 and as of December 31, 2013 and 2012 was derived from our audited consolidated financial statements, which are included in Item 15 of this Annual Report on Form 10-K. Our selected financial information presented for each of the years ended December 31, 2010 and 2009 and as of December 31, 2011, 2010 and 2009 was derived from our audited consolidated financial statements, which are not included in this Annual Report on Form 10-K.

The information contained in this table should also be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations," and the consolidated financial statements and accompanying notes thereto included elsewhere in this Annual Report on Form 10-K.

Consolidated Statement of Operations Data

	Year ended December 31,				
	2013	2012	2011(1)	2010	2009
	(in thousands, except per share amounts)				
Revenues:					
Subscription (2)	$227,921	$171,647	$144,436	$136,395	$102,541
Professional services	48,928	46,700	40,023	30,031	37,859
Total revenues (3)	276,849	218,347	184,459	166,426	140,400
Costs of revenues:					
Subscription	37,053	32,600	28,408	26,400	23,752
Professional services	32,856	30,062	24,423	25,847	26,219
Total cost of revenues	69,909	62,662	52,831	52,247	49,971
Gross profit	206,940	155,685	131,628	114,179	90,429
Operating costs and expenses:					
Research and development	51,202	42,276	29,568	25,772	22,534
Sales and marketing	66,337	47,739	36,147	30,721	27,452
General and administrative	65,513	37,777	37,056	34,379	31,666
Litigation settlement (4)	—	—	6,300	—	—
Total operating costs and expenses	183,052	127,792	109,071	90,872	81,652
Operating income	23,888	27,893	22,557	23,307	8,777
Interest and other (expense) income, net	(5,506)	176	408	415	(1,736)
Income before provision for income taxes	18,382	28,069	22,965	23,722	7,041
Provision for income taxes (5)	1,721	10,049	(16,433)	905	1,859
Net income	$16,661	$18,020	$39,398	$22,817	$5,182
Earnings per share (6):					
Basic	$0.33	$0.37	$0.83	$0.50	$0.17
Diluted	$0.31	$0.35	$0.80	$0.47	$0.12
Weighted average common shares outstanding (6)(7):					
Basic	51,060	49,092	47,292	45,916	29,728
Diluted	54,118	50,938	49,314	48,124	41,472

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Stock-based compensation expense and depreciation and amortization of intangible assets included in cost of revenues and operating costs and expenses are as follows:

	Year Ended December 31,				
	2013	2012	2011(1)	2010	2009
	(in thousands)				
Stock-based compensation expense					
Cost of revenues	$3,149	$1,751	$1,263	$755	$398
Research and development	2,397	1,049	745	525	522
Sales and marketing	8,859	2,871	2,014	1,461	1,165
General and administrative	21,738	5,243	4,798	3,753	2,645
Total stock-based compensation	$36,143	$10,914	$8,820	$6,494	$4,730
Depreciation					
Cost of revenues	$3,975	$4,280	$4,371	$5,296	$6,833
Research and development	1,289	944	966	1,227	809
Sales and marketing	339	603	329	443	494
General and administrative	529	315	562	754	618
Total depreciation	6,132	6,142	6,228	7,720	8,754
Amortization of intangible assets					
Cost of revenues	589	1,276	1,088	1,107	1,682
Sales and marketing	215	516	501	352	144
Total amortization of intangible assets	804	1,792	1,589	1,459	1,826
Total depreciation and amortization of intangible assets	$6,936	$7,934	$7,817	$9,179	$10,580
Consolidated Balance Sheet Data					
	As of December 31,				
	2013	2012	2011(1)	2010	2009
	(in thousands)				
Cash and cash equivalents (7)	22,328	$32,683	$45,214	$16,025	$39,449
Total marketable securities (7)(8)	413,997	89,871	62,463	69,473	49,638
Total current assets	304,545	182,701	147,666	132,881	101,652
Restricted cash (9)	5,344	388	388	532	532
Total assets	573,353	224,631	189,835	157,945	143,409
Total deferred revenue (2)(3)	54,058	54,671	63,262	83,768	97,710
Total capital lease obligations	80	155	250	780	3,516
Total long-term debt (8)	229,705	—	—	—	—
Stockholders' equity (7)(8)	225,813	142,091	104,117	51,126	20,232

(1) On July 1, 2011, we acquired Clinical Force, a UK-based provider of CTMS. Our results of operations for 2011 and for subsequent periods include the operations of Clinical Force since the date of acquisition.

(2) In December 2010, in connection with a customer contract termination, we recognized an additional $3.2 million in revenues, on an accelerated basis, which represented the remaining balance of deferred revenue on the balance sheet date as of the date of cancellation.

(3) As a result of our adoption of Accounting Standards Update, or ASU, No. 2009-13 on January 1, 2011, professional services revenues in multiple-element arrangements entered into in 2011 or later were recognized as rendered, subject to the proportional performance methodology, as a separate unit of accounting, as compared with the revenues recognized ratably over the term of the arrangements in prior periods. Additionally, such adoption had an impact on our subscription revenue recognition in multiple-element arrangements, to the extent that the start of revenue recognition for subscriptions is not dependent upon the delivery of professional services, which was a requirement under our former single unit of accounting revenue recognition policy for multiple-element arrangements. During the year ended December 31, 2011, we accelerated $6.0 million of deferred revenue related

to multiple-element arrangements materially modified in 2011, as per the requirements of ASU No. 2009-13, Multiple-Deliverable Revenue Arrangements.

(4) In December 2011, we entered into a settlement agreement with Datasci, pursuant to which we settled the ongoing litigation for a one-time lump sum payment of $6.3 million, which was included in our results of operations for the year ended December 31,

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2011. See Note 15, “Commitments and Contingencies—Legal Matters,” to our consolidated financial statements included in Item 15 of this Annual Report on Form 10-K for more information regarding legal matters.

(5) For the years ended December 31, 2010 and prior, we did not realize an income tax benefit for the majority of our net operating loss carryforwards and other net deferred tax assets, as we had yet to determine whether it was more likely than not that our future income would be sufficient to utilize these tax benefits. Substantially all of our deferred tax assets were offset with valuation allowances. During the fourth quarter of 2011, we reversed the valuation allowance by approximately $19.0 million as it is more likely than not that our future income will be sufficient to utilize these tax benefits. This reversal of the valuation allowance was recorded as a one-time tax benefit in our provision for income taxes for the year ended December 31, 2011.

(6) Basic and diluted earnings per share amounts and basic and diluted weighted average common shares outstanding have been adjusted for all periods presented to reflect a two-for-one stock split effected in the form of a stock dividend in December 2013.

(7) In June 2009, we completed an IPO, issuing 12.6 million shares of common stock at a public offering price of $7.00 per share (each on a post-split basis). As a result of the offering, we received net proceeds of $75.2 million, after deducting underwriting discounts and commissions of $6.2 million and offering expenses of $6.8 million. Subsequently, a portion of such proceeds was invested into high quality marketable securities. In additional, the underwriters exercised in full their over-allotment option to purchase an additional 1.8 million shares of common stock (on a post-split basis) from certain selling stockholders. We did not receive any proceeds from the sale of shares by the selling stockholders.

(8) In August 2013, we issued $287.5 million of 1.00% convertible senior notes which will mature on August 1, 2018 unless earlier repurchased or converted. In accounting for the issuance, we separated the notes into their liability and equity components. As of December 31, 2013, the notes are not convertible and the liability portion thereof has been recorded, net of discount, as long-term liabilities in our consolidated financial statements. Proceeds from this issuance have been invested into high quality marketable securities. See Note 9, "Debt," to our consolidated financial statements included in Item 15 of this Annual Report on Form 10-K for more information regarding the convertible senior notes.

(9) Our restricted cash represents deposits made to fully collateralize certain standby letters of credit in connection with office lease arrangements. The majority of our outstanding letters of credit was previously collateralized in part with our revolving line of credit which matured on September 30, 2013. Subsequently our outstanding letters of credit have been fully collateralized with our restricted cash.

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

The following is a discussion and analysis of our financial condition and results of operations. You should read this discussion and analysis together with our consolidated financial statements and accompanying notes to consolidated financial statements included in Item 15 of this Annual Report on Form 10-K. This discussion contains forward-looking statements that are based on management’s current expectations, estimates and projections about our business and operations. Our actual results may differ from those currently anticipated and expressed in such forward-looking statements as a result of a number of factors, including those described in “Risk Factors” under Item 1A and elsewhere in this Annual Report on Form 10-K.

Overview

We are the leading global provider of cloud-based solutions for clinical research in life sciences, designed to transform clinical development and increase the value of our customers' research investments. Our platform technology and solutions address the lifecycle of the clinical process, enhancing productivity and quality by speeding time to market, reducing costs, increasing therapeutic value and minimizing operational and program risk.

Our customers are life sciences companies that create and test new drugs, vaccines, devices, diagnostics and other treatments and create new uses and markets for existing treatments. They include pharmaceutical, biotechnology, medical device and diagnostic companies, academic institutions and medical centers, CROs, and other organizations engaged in clinical testing.

Our solutions allow our customers to increase the value of their development programs by more efficiently and effectively designing, planning, and managing key aspects of the clinical trial process, including study and protocol

design, trial planning and budgeting, site negotiation, clinical portal, trial management, randomization and trial supply management, clinical data capture and management, safety events capture, medical coding, clinical business analytics, and data flow and interoperability among multiple trial applications. Our customers rely on our solutions to safely accelerate the clinical development process, enhancing decision-making and saving resources in the development life cycle.

The demand for electronic clinical solutions, such as those provided by us, has been driven by the increasing complexity and cost associated with paper-based trials and inefficiencies with early generation EDC solutions. Paper-based trials may delay the clinical development process, impair data quality and prevent real-time decision making, while traditional EDC solutions have faced challenges with integration, site requirements, customization and scalability.

We have grown our revenues significantly since inception by expanding our customer base, increasing penetration with existing customers, selling multiple solutions under our clinical cloud-based platform, enhancing our solutions and services and growing our indirect channel. In order to achieve and sustain our growth objectives, we have invested and will continue to invest in key areas, including: new personnel, particularly in direct domestic and international sales activities and research and development; resources to support our offerings, including new and expanded technologies and solution capabilities; marketing programs to build brand awareness; and infrastructure to support growth.

We derive a majority of our subscription revenues through multi-study arrangements which grant customers the right to use our solutions for a predetermined number of studies. We also offer our solutions on a single-study basis under which customers may

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use our platform for a limited number of studies or evaluate it prior to committing to multi-study arrangements. We invest heavily in training our customers, their investigators and other third parties to assume some or all of the implementation and management activities. We believe this knowledge transfer accelerates customer adoption and provides a better basis for a transformative approach to future development.

We use a number of metrics to evaluate and manage our business. These metrics include revenue growth, customer growth, customer retention rate, revenues from lost customers, geographic contribution, and subscription backlog. Our customer base has grown from 219 at January 1, 2011 to 397 at December 31, 2013. Our relationships with some of these customers include multiple divisions and business units at various domestic and international locations. We generate revenues from sales to new customers as well as sales and renewals from our existing customers. Our global direct sales organization represents our primary source of sales, with an increasing volume of sales generated through our CRO relationships. Our customer retention rate was 88.0%, 90.5% and 89.0% in 2013, 2012 and 2011, respectively. We calculate customer retention based upon the number of customers that existed both at the beginning and end of the relevant period. Revenues from lost customers accounted for 1.5%, 1.6% and 4.7% of total prior year revenues in 2013, 2012 and 2011, respectively. To calculate the impact of customers lost during the period, we consider the revenues recognized from lost customers during the most recent prior fiscal year as a percentage of total company revenues from the same period. Traditionally, we maintain a high percentage of customer retention and hence the revenue impact from lost customers is insignificant to our total revenues. Our revenues from lost customers in 2011 were impacted by a contract termination which resulted in a one-time acceleration of revenue recognition in the fourth quarter of 2010. We believe revenues from lost customers coupled with customer retention rate give the best sense of volume and scale of customer loss and retention. Our presentation of customer retention and revenues from lost customers may differ from other companies in our industry.

We manage our business as one reportable segment. Historically, we have generated most of our revenues from sales to customers located in the United States. However, revenues generated from customers located in Europe and Asia (including Australia) represent a significant portion of overall revenues. Revenues generated from customers located in Europe, or European revenues, increased year-over-year by 7% in 2013 and 5% in 2012. European revenues represented approximately 15%, 18% and 20% of total revenues in 2013, 2012 and 2011, respectively. Revenues generated from customers located in Asia, or Asian revenues, increased year-over-year by 15% in 2013 and 13% in 2012. Asian revenues represented approximately 13%, 14% and 15% of total revenues in 2013, 2012 and 2011, respectively. We expect European and Asian revenues to continue to represent a significant portion of total sales as we continue to serve existing and new customers in these markets.

We monitor subscription backlog as an indicator of the underlying health of our business. Our subscription backlog solely relates to our cloud-based offerings, representing the total future contract value of outstanding multi-study and single-study arrangements, billed and unbilled, at a point in time. Subscription revenues generated in any given period are a function of revenues recognized from the beginning of period subscription backlog, contract renewals, and new customer contracts. For this reason, subscription backlog at the beginning of any period is not necessarily indicative of long-term future performance. We monitor the amount of revenues expected to be recognized from subscription backlog over the current fiscal year. As of January 1, 2014 and 2013, we had full year subscription backlog of approximately $228 million and $186 million, respectively. Our presentation of backlog may differ from other companies in our industry.

We consider the global adoption of clinical development technologies to be essential to our future growth. Our future growth will also depend on our ability to sustain the high levels of customer satisfaction and our ability to increase sales to existing customers. In addition, the market for our solutions is often characterized by rapid technological change and evolving regulatory standards. Our future growth is dependent on the successful development and introduction of new solutions and enhancements. To address these challenges, we will continue to expand our direct and indirect sales channels in domestic and international markets, pursue research and development as well as acquisition opportunities to expand and enhance our offerings, expand our marketing efforts, and drive customer adoption through our knowledge transfer professional services offerings. Our success in these areas will depend upon our abilities to execute on our operational plans, interpret and respond to customer and regulatory requirements, and retain key staff.

As a result of our aggressive growth plans, specifically our hiring and talent retention activities, we have incurred significant stock-based compensation expense in 2013, primarily from equity awards granted during the current year. This resulted in higher operating costs and expenses in both absolute dollars and as a percentage of total revenues, particularly with regard to general and administrative and sales and marketing expenses. As we continue with our growth plan, we anticipate that our stock-based compensation expense will remain at this level for at least the next several years.

Acquisition of Clinical Force

On July 1, 2011, we completed an acquisition of Clinical Force, a provider of CTMS. With this acquisition, we expanded our service offerings to include a clinical trial management solution, which enables our customers to reduce the financial and operational management burden of clinical trials, streamline clinical processes, and increase visibility to timely information that enhances governance and decision making, The total consideration was $7.0 million, consisting of a cash payment of $5.2 million paid at the closing date, plus additional performance-based earn-out payments of $2.6 million, which had an estimated fair value of $1.8 million as of the acquisition date. Clinical Force's operations have been included in our consolidated financial statements since the date of acquisition on July 1, 2011. We have combined Clinical Force into our single operating segment.

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Litigation Settlement

On December 13, 2011, we entered into a settlement agreement with Datasci. The settlement agreement relates to a lawsuit filed by Datasci in 2009 alleging breach of contract for failing to pay royalties under a prior license and settlement agreement executed between the parties in June 2007. Under the settlement agreement, we agreed to make a one-time, lump-sum payment to Datasci in the amount of $6.3 million to settle the claim and obtain an irrevocable, fully-paid, worldwide, non-exclusive license to the patent that was the subject of the claim by Datasci. The related payment was made on December 16, 2011, and the full amount of the settlement was included in our results of operations for the year ended December 31, 2011.

Sources of Revenues

We derive revenues from subscription and professional services. We typically sell multi-study or single-study subscription arrangements, which grant our customers the right to use our cloud-based solutions. Our subscription revenues are comprised of subscription fees from customers accessing our cloud-based solutions. Professional services revenue is derived from the provision of professional services that help life sciences companies realize higher value in their clinical development processes.

Subscriptions to our cloud-based solutions are principally provided through multi-study arrangements, which grant customers the right to manage up to a predetermined number of clinical trials for a term generally ranging from one to five years, as well as single-study arrangements that allow customers to use our solutions for an individual study and/or to evaluate our products prior to committing to multi-study arrangements. Many of our customers have migrated from single-study arrangements to multi-study arrangements, which represent the majority of our subscription revenues.

Our professional services provide our customers with reliable, repeatable and cost-effective implementation and training in the use of our cloud-based solutions. We also offer consulting services to advise customers on ways to optimize their clinical development process from trial concept to conclusion. Over the long term, we expect professional services revenues to decline slightly as a percentage of total revenues as our customers and partners become more adept at the management and configuration of our technology for their clinical trials as part of our knowledge transfer efforts.

Cost of Revenues

Cost of revenues consists primarily of costs related to delivering, maintaining and supporting our cloud-based solutions and delivering our professional services and support. These costs include salaries, benefits, bonuses and stock-based compensation for our data center and professional services staff. Cost of revenues also includes costs associated with our data center, including networking and related depreciation expense; as well as outside service provider costs, amortization expense and general overhead. We allocate general overhead, such as applicable shared rent and utilities, to cost of revenues based on relative headcount. The costs associated with providing professional services are recognized as such costs are incurred. Over the long term, we believe that cost of revenues as a percentage of total revenues will decrease.

Operating Costs and Expenses

Research and Development. Research and development expenses consist primarily of personnel and related expenses for our research and development staff, including salaries, benefits, bonuses and stock-based compensation, the cost of certain third-party service providers and allocated overhead. We have focused our research and development efforts on expanding the functionality and ease of use of our cloud-based solutions. We expect research and development costs to increase in absolute dollars in the future as we intend to release new features and functionality designed to maximize the efficiency and effectiveness of the clinical development process for our customers. Over the long term, we believe that research and development expenses as a percentage of total revenues will decrease.

Sales and Marketing. Sales and marketing expenses consist primarily of personnel and related expenses for our sales and marketing staff, including salaries, benefits, bonuses and stock-based compensation, commissions, travel costs, and marketing and promotional events, corporate communications, advertising, other brand building and product marketing expenses and allocated overhead. Our sales and marketing expenses have increased in absolute dollars primarily due to our ongoing substantial investments in customer acquisition and other activities to build brand awareness. We expect sales and marketing expenses to continue to increase in absolute dollars. Over the long term, we

believe that sales and marketing expenses as a percentage of total revenues will decrease.

General and Administrative. General and administrative expenses consist primarily of personnel and related expenses for executive, legal, quality assurance, finance and human resource departments, including salaries, benefits, bonuses and stock-based compensation, professional fees, insurance premiums, allocated overhead and other corporate expenses. On an ongoing basis, we expect general and administrative expenses to increase modestly in absolute dollars as we continue to add administrative personnel and incur additional professional fees and other expenses resulting from continued investment in our infrastructure to support our continued growth. Over the long term, we believe that general and administrative expenses as a percentage of total revenues will decrease.

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Income Tax Expense

Prior to 2011, we did not realize an income tax benefit for the majority of our net operating loss carryforwards, or NOLs, and other net deferred tax assets as we had yet to determine that it was more likely than not that our future taxable income would be sufficient to utilize these tax benefits. As a result, we had provided a valuation allowance against the majority of our net deferred tax assets as of and prior to December 31, 2010. In the fourth quarter of 2011, we determined that, as a result of our evaluation of deferred tax asset recoverability against our estimated future taxable income, it was more likely than not that we would realize the benefit from the majority of our deferred tax assets. Consequently, we recorded a one-time benefit resulting from the reversal of the valuation allowance on the majority of our net deferred tax assets.

We have U.S. federal and state NOLs available to offset future taxable income which do not fully expire until 2033 and are subject to limitations under Section 382 of the Internal Revenue Code, or Section 382. We also have other tax credits, such as research and development tax credits, available to further offset our taxable income. Our cash tax rate is significantly lower than our book tax rate primarily due to excess tax benefit generated from our equity awards. We are subject to tax in the United States as well as other tax jurisdictions in which we conduct business. See Note 14, "Income Taxes," to our consolidated financial statements included in Item 15 of this Annual Report on Form 10-K for more information regarding our income taxes.

Critical Accounting Policies

Our consolidated financial statements are prepared in conformity with accounting principles generally accepted in the United States of America. Our critical accounting policies, including the assumptions and judgments underlying them, require the application of significant judgment in the preparation of our financial statements, and as a result they are subject to a greater degree of uncertainty. In applying these policies, we use our judgment to determine the appropriate assumptions to be used in calculating estimates that affect the reported amounts of assets, liabilities, revenues and expenses. Estimates and assumptions are based on historical experience and on various other factors that are believed to be reasonable under the circumstances. Accordingly, actual results could differ from those estimates. Our critical accounting policies include the following:

Revenue Recognition

We derive our revenues from two sources: (1) subscription revenues, which are comprised of subscription fees from customers accessing our cloud-based solutions; and (2) related professional services, such as training, implementation, interface creation, trial configuration, data testing, reporting, procedure documentation, and other customer-specific services. We recognize revenues when all of the following conditions are satisfied:

- persuasive evidence of an arrangement exists;
- service has been delivered to the customer;
- amount of the fees to be paid by the customer is fixed or determinable; and
- collection of the fees is reasonably assured or probable.

Subscription

We derive our subscription revenues primarily from multi-study and single-study arrangements that provide our customers the right to use our cloud-based solutions for a specified term. We recognize revenues ratably over the term of the arrangement, beginning with the commencement of the arrangement term, which is generally aligned with the date our cloud-based solutions are made available to the customer, assuming all other revenue recognition criteria are met. The term of the arrangement includes optional renewal periods if such renewal periods are likely to be exercised.

Professional Services

We also provide a range of professional services that our customers have the ability to utilize on an as-needed basis. Professional services do not result in significant alterations to our underlying solutions. When professional services are sold separate and apart from subscriptions, revenues are recognized using a proportional performance method or as services are rendered.

Multiple-Element Arrangements

We may also enter into multiple-element arrangements that combine a subscription to our cloud-based solutions with various professional services. Our professional services are typically sold together with subscriptions as a component

of a single-study or multi-study arrangement.

We account for our multiple-element arrangements pursuant to Accounting Standards Codification, or ASC, 605-25, Revenue Recognition- Multiple-Element Arrangements.

To qualify as a separate unit of accounting under ASC 605-25, the delivered item must have value to the customer on a standalone basis. The significant deliverables under our multiple-element arrangements are subscription and professional services.

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We determined that subscriptions to our various cloud-based solutions are individually considered separate units of accounting. In determining whether each of our solutions has standalone value, we considered factors including the availability of similar solutions from other vendors, our fee structure based on inclusion and exclusion of the solution, and our marketing and delivery of the solution. We use estimated selling price, or ESP, to determine the selling price for our subscriptions when sold in multiple-element arrangements, as we do not have vendor-specific evidence, or VSOE, for these subscriptions and third-party evidence, or TPE, is not a practical alternative due to differences in features and functionality as compared with other companies' offerings.

We also determined that professional services have standalone value because those services are sold separately by other vendors. We use ESP to determine the selling price for professional services when sold in multiple-element arrangements. Due to insufficient reliable pricing data, we are unable to establish VSOE. While other vendors offer similar services, they represent a small component of the vendor's overall offerings. As a result, we are unable to reliably determine TPE on a standalone basis.

We determine our single-point ESP for subscription and professional services as follows:

- Subscription. We utilize a pricing tool that provides price quotes for our subscription configurations. Any new potential customer subscription arrangements must be priced through the utilization of our pricing tool. We have established an internal committee to monitor compliance and evaluate pricing data on a periodic basis. This evaluation includes the review of historical pricing data, market conditions consideration and the review of pricing strategies and practices. Any necessary pricing modification made to the pricing tool is supported by the result of such evaluation. Accordingly, our ESP for subscriptions is obtained from this pricing tool.
- Professional Services. We evaluate internal historical professional services pricing data to determine average pricing rates by type of professional services rendered. These averages are utilized to determine ESP for professional services, and are reviewed and updated at least annually.

We believe the effect of changes in either the selling price, or the method, of assumptions used to determine ESP for subscriptions and professional services will not have significant effect on the allocation of the arrangement consideration as the ESP for the above deliverables are based on historical pricing data.

We then allocate the arrangement consideration based on its relative ESP. Revenues for deliverables under subscriptions are recognized ratably over the term of the arrangement, beginning with the commencement of the arrangement term, which is generally aligned with the date our cloud-based solutions are made available to the customer, assuming all other revenue recognition criteria are met. Revenues for deliverables under professional services are recognized using a proportional performance method or as services are rendered.

As required by ASC 605-25, we continue to account for a small number of multiple-element arrangements entered into prior to 2011 as a combined single unit of accounting, which includes subscription and professional services, under the pre-amended ASC 605-25 until such arrangements expire. The related revenues are recognized ratably beginning with the commencement of the arrangement term, assuming all other remaining revenue recognition criteria are met. In addition, management's estimate of fair value for professional services is used to derive a reasonable approximation for presenting subscription revenues and professional services revenues separately in our consolidated financial statements.

Deferred Revenue

Deferred revenue consists of billings or payments received in advance of revenue recognition and is recognized as the revenue recognition criteria are met. Amounts that have been invoiced are initially recorded in accounts receivable and deferred revenue. We invoice our customers in accordance with the terms of the underlying contract, usually in installments in advance of the related service period. Accordingly, the deferred revenue balance does not represent the total contract value of outstanding arrangements. Payment terms are typically net 30 to 45 days. Deferred revenue that is expected to be recognized during the subsequent 12-month period is recorded as current deferred revenue and the remaining portion as noncurrent deferred revenue.

In some instances, a customer elects to renew its subscription prior to the original termination date of the arrangement. The renewed subscription agreement provides support for in-process clinical trials, and includes the right to use our cloud-based solutions for initial clinical studies. As such, the unrecognized portion of the deferred revenue associated with the original arrangement is aggregated with the consideration received upon renewal and recognized as revenues

over the renewed term of the subscription.

Stock-Based Compensation

We follow ASC 718, Compensation—Stock Compensation, to account for all of our stock-based compensation plans. According to ASC 718, all forms of share-based payments to employees, including employee stock options, nonvested restricted stock awards, or RSAs, performance-based restricted stock units, or PBRSUs, and employee stock purchase plans, are treated the same as any other form of compensation by recognizing the related cost in the statement of operations.

Under ASC 718, stock-based compensation expense is measured at the grant date based on the fair value of the award, and the expense is recognized ratably over the award's vesting period. For all grants, we recognize compensation cost under the

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straight-line method, net of estimated forfeitures. Forfeiture assumptions used in amortizing stock-based compensation expense are based on an analysis of historical data.

We measure the fair value of stock options on the date of grant using the Black-Scholes pricing model which requires the use of several estimates, including:

- the expected volatility of our stock price;
- the expected life of the option;
- risk free interest rates; and
- expected dividend yield.

For stock options, we use stock price volatility of our peer group of companies as a basis for determining the expected volatility together with the closing prices of our publicly-traded stock. We have increased the weight of our own stock price volatility within the weighted average over time as sufficient trading history of our stock is established, with the intent of relying completely upon our own stock's volatility by 2014. In addition, as we do not have sufficient historical exercise data in the period since our stock began being publicly traded to provide a reasonable basis upon which to estimate the expected life, we use the simplified method as allowed under SEC Staff Accounting Bulletin No. 110 for estimating the expected life of options as all of our options qualify as "plain-vanilla" options. The risk-free interest rate is based on the United States Treasury yield curve with a maturity tied to the expected life of the stock option. We have not paid and do not expect to pay dividends on our common stock. Thus, no expected dividend yield is factored into our Black-Scholes model.

The fair value of each nonvested RSA is measured as if the nonvested RSA was vested and issued on the grant date.

The fair value of each PBRSU whose vesting is based upon the achievement of a market price target, or market condition, is based upon the results of a Monte Carlo valuation model, which requires the use of estimates, including:

- the expected volatility of our stock price and, in some cases when the market condition compares the performance of our stock with the NASDAQ Composite Index, the expected volatility of the NASDAQ Composite Index;
- the expected term; and
- risk free interest rates.

For PBRSUs with market conditions, we determine volatility based upon the closing price of our publicly-traded stock and the closing price of the NASDAQ Composite Index as applicable. The risk-free interest rate is based on the United States Treasury yield curve with a maturity tied to the expected term of the PBRSU. We have not paid and do not expect to pay dividends on our common stock. Thus, no expected dividend yield is factored into our Monte Carlo model.

The use of different assumptions in the Black-Scholes or Monte Carlo valuation models would result in different amounts of stock-based compensation expense. Furthermore, if different assumptions are used in future periods, stock-based compensation expense could be materially impacted in the future.

The fair value of each PBRSU whose vesting is dependent on the satisfaction of a performance condition is measured as if the PBRSU was vested and issued on the grant date, and adjusted each period for expected performance relative to the associated goals.

In the case of PBRSUs with a performance condition, related compensation expense is recognized only when it is probable that the condition will be achieved. With regard to certain long-term PBRSUs whose vesting is dependent on a performance condition related to our compound annual revenue growth, or CAGR, and a market condition related to our total stockholder return, or TSR, over the three-year period ending December 31, 2015, we determined during the fourth quarter of 2013 that the achievement of the requisite performance condition is probable. As a result we began recognizing the related expense in the fourth quarter of 2013.

We recorded stock-based compensation of $36.1 million, $10.9 million and $8.8 million during 2013, 2012 and 2011, respectively. In future periods, stock-based compensation expense is expected to increase modestly as a result of our existing unrecognized stock-based compensation and as we issue additional equity-based awards to continue to attract and retain employees and non-employee directors. As of December 31, 2013, we had $68.7 million of unrecognized stock-based compensation costs related to all non-vested equity awards granted under our 2000 Stock Option Plan and 2009 Plan. The unrecognized compensation cost is expected to be recognized over an average period of 2.56 years for stock options, 2.20 years for nonvested RSAs, and 2.10 years for PBRSUs as of December 31, 2013.

Convertible Notes

In accounting for the issuance of the Notes, which permit cash settlement, we separated the Notes into liability and equity components in a manner that reflects our nonconvertible borrowing rate at the time of issuance. The value of the conversion option is determined as the excess of the proceeds from the issuance of the Notes over the proceeds that we expect would have been received had we issued similar debt without a conversion option. This difference represents a debt discount that is amortized to interest expense over the term of the Notes. The equity component will not be remeasured as long as it continues to meet the

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conditions for equity classification. Debt issue costs are capitalized and amortized to interest expense over the term of the Notes and equity issue costs are netted against the equity component.

Goodwill and Intangibles

Goodwill, which consists of the excess of the purchase price over the fair value of identifiable net assets of businesses acquired, is evaluated for impairment using a two-step process that is performed at least annually on October 1 of each year, or whenever events or circumstances indicate that an impairment may have occurred. The first step is a comparison of the fair value of an internal reporting unit with its carrying amount, including goodwill. If the fair value of the reporting unit exceeds its carrying value, goodwill of the reporting unit is not considered impaired and the second step is unnecessary. If the carrying value of the reporting unit exceeds its fair value, a second test is performed to measure the amount of impairment by comparing the carrying amount of the goodwill to a determination of the implied value of the goodwill. If the carrying amount of the goodwill is greater that the implied value, an impairment loss is recognized for the difference.

The implied value of goodwill is determined as of the test date by performing a purchase price allocation, as if the reporting unit had just been acquired, using currently estimated fair values of the individual assets and liabilities of the reporting unit, together with an estimate of the fair value of the reporting unit taken as a whole. The estimate of the fair value of the reporting unit is based upon information available regarding our market capitalization, prices of similar groups of assets, or other valuation techniques including present value techniques based upon estimates of future cash flow.

Intangible assets, including technology, database, customer relationships, and customer contracts arising from our two acquisitions since 2008, are recorded at cost less accumulated amortization and are amortized using a method which reflects the pattern in which the economic benefit of the related intangible asset is utilized. For intangible assets subject to amortization, impairment is recognized if the carrying amount is not recoverable and the carrying amount exceeds the fair value of the intangible asset.

As of December 31, 2013 and 2012, we had goodwill of $15.5 million and $15.4 million, respectively. In 2013, as part of our annual goodwill impairment test, we reassessed our reporting units. Based on the results of that assessment, in which we concluded that we are a single reporting unit and operating segment, we considered our market capitalization under the market approach in determining the estimate of fair value of our reporting unit, as management believed that our market capitalization based on quoted market prices was the best evidence in determining such estimated fair value. The results of our annual impairment test performed on October 1, 2013 indicated that the fair value of our reporting unit exceeded its carrying amount by over 1,100% and therefore our goodwill was not impaired. The determination of whether or not goodwill or acquired intangible assets have become impaired involves a significant level of judgment in the assumptions underlying the approach used to determine the value of our reporting unit. We set criteria of assumptions and estimates that were reviewed and approved by various levels of management. Changes in our strategy or market conditions could significantly impact these judgments and require adjustments to recorded amounts of intangible assets.

Income Taxes

We use the asset and liability method of accounting for income taxes, as prescribed by ASC 740, Income Taxes, which recognizes deferred tax assets and liabilities for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. Valuation allowances are recorded to reduce deferred tax assets when it is more likely than not that a tax benefit will not be realized.

All of the taxes on our undistributed earnings from our foreign subsidiaries are included in U.S. current income taxes under Internal Revenue Code Section 956. As a result, no deferred income tax liability associated with our undistributed earnings was recorded.

In addition, we follow ASC 740-10 for the determination of whether tax benefits claimed or expected to be claimed on a tax return should be recorded in the consolidated financial statements. Under ASC 740-10, we may recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on

examination by the taxing authorities, based on the technical merits of the position.

We had approximately $36.6 million and $12.0 million of federal NOLs, as of December 31, 2013 and 2012, respectively, available to offset future taxable income, expiring from 2020 through 2033. This federal NOL included $24.5 million attributable to the excess tax deductions on stock option activity which were not included in the recorded deferred tax assets as of December 31, 2013. The tax benefit of this deduction will be recognized through additional paid-in capital at such time as the federal NOL is used to reduce income taxes payable. We also had NOLs for state and local income tax purposes in aggregate of approximately $22.1 million and $12.2 million as of December 31, 2013 and 2012, respectively, available to offset future state and local taxable income, expiring from 2020 through 2033. Certain NOLs are subject to limitations under Section 382.

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Results of Operations

We recognize revenues from subscriptions ratably over the terms of these arrangements. As a result, a substantial majority of our subscription revenues in each quarter are generated from arrangements entered into during prior periods. Consequently, an increase or a decrease in new subscription arrangements in a particular quarter may not significantly affect our results of operations in that quarter.

Our typical practice is to sell our subscriptions and professional services in a multiple-element arrangement. Under our current accounting policy, our professional services revenues are recognized as delivered for any multiple-element arrangements. Concurrently, as required by ASC 605-25, we continue to recognize revenues from professional services ratably over the term of those multiple-element arrangements entered into prior to 2011 under the pre-amended ASC 605-25 until such arrangements expire. As a result, professional services revenues subsequent to 2010 consisted of revenues recognized under different revenue recognition policies as stated. The portion of professional services revenues recognized under our former accounting policy has gradually declined over the last few years and was insignificant in 2013. Regardless of revenue recognition, we recognize expenses related to our professional services in the period in which the expenses are incurred.

We now expect professional services and related gross margins to be more reflective of the services delivered during each reporting period.

The following table sets forth our consolidated results of operations as a percentage of total revenues for the periods shown:

	Year Ended December 31,		
	2013	2012	2011
Revenues:			
Subscription	82.3 %	78.6 %	78.3 %
Professional services	17.7 %	21.4 %	21.7 %
Total revenues	100.0 %	100.0 %	100.0 %
Cost of revenues:			
Subscription	13.4 %	14.9 %	15.4 %
Professional services	11.9 %	13.8 %	13.2 %
Total cost of revenues	25.3 %	28.7 %	28.6 %
Gross profit	74.7 %	71.3 %	71.4 %
Operating costs and expenses:			
Research and development	18.5 %	19.4 %	16.0 %
Sales and marketing	24.0 %	21.9 %	19.6 %
General and administrative	23.6 %	17.2 %	20.1 %
Litigation settlement	— %	— %	3.4 %
Total operating costs and expenses	66.1 %	58.5 %	59.1 %
Operating income	8.6 %	12.8 %	12.3 %

Year Ended December 31, 2013 Compared with Year Ended December 31, 2012

Revenues

	Year Ended December 31, 2013		2012		Change	
	Amount	% of Revenues	Amount	% of Revenues	Amount	%
	(Amount in thousands)					
Revenues:						
Subscription	$227,921	82.3 %	$171,647	78.6 %	$56,274	32.8 %
Professional services	48,928	17.7 %	46,700	21.4 %	2,228	4.8 %
Total revenues	$276,849	100.0 %	$218,347	100.0 %	$58,502	26.8 %

Total revenues. Total revenues increased $58.5 million, or 26.8%, to $276.8 million in 2013 from $218.3 million in 2012. The increase in revenues was due to a $56.3 million increase in subscription revenues and a $2.2 million

increase in professional services revenues.

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Subscription revenues. Subscription revenues increased $56.3 million, or 32.8%, to $227.9 million in 2013 from $171.6 million in 2012. The majority of the increase in subscription revenues was derived from increased activity among our existing large and midmarket customers, primarily resulting from renewals and increased adoption of our solutions. We also benefited from strong demand from both new and existing customers who contracted for multiple products under our cloud-based platform, with 49% of our customers using multiple solutions as of December 31, 2013 as compared with 38% at the close of the prior year. In 2013, we added 94 new customers to reach a total of 397 customers as of December 31, 2013. Revenues from new customers accounted for 13% of the total increase in subscription revenues. Subscription revenues also increased significantly from both international and domestic customers compared with the prior period. Revenues from customers based in North America and Asia grew 43% and 16%, respectively, whereas revenues from customers based in Europe grew 11%.

Professional services revenues. Revenues from professional services increased $2.2 million, or 4.8%, to $48.9 million in 2013 from $46.7 million in 2012. The increase in professional services revenues was due to high demand from our existing customers who sought to optimize the value of our platform, as well as servicing of new customers.

Cost of Revenues

	Year Ended December 31,								
	2013			2012			Change		
	Amount	% of Revenues		Amount	% of Revenues		Amount	%	
	(Amounts in thousands)								
Cost of revenues:									
Subscription	$37,053	13.4	%	$32,600	14.9	%	$4,453	13.7	%
Professional services	32,856	11.9	%	30,062	13.8	%	2,794	9.3	%
Total cost of revenues	$69,909	25.3	%	$62,662	28.7	%	$7,247	11.6	%

Total cost of revenues. Total cost of revenues increased $7.2 million, or 11.6%, to $69.9 million in 2013 from $62.7 million in 2012. The increase in total cost of revenues was due to a $4.4 million increase in cost of subscription revenues and a $2.8 million increase in cost of professional services revenues.

Cost of subscription revenues. Cost of subscription revenues increased $4.4 million, or 13.7%, to $37.0 million in 2013 from $32.6 million in 2012. The increase was primarily due to a rise in technology-related expenses of approximately $2.3 million, comprised of higher third-party cloud hosting costs and increased costs associated with multi-year software licenses and software-related service contracts with outside vendors. The increase in cost of subscription revenues was also due in part to a rise of approximately $1.3 million in personnel-related costs, including salaries and employee benefits, and $0.9 million in consulting costs associated with our help-desk support, resulting from the expanding headcount necessary to support our business growth.

Cost of professional services revenues. Cost of professional services revenues increased $2.8 million, or 9.3%, to $32.9 million in 2013 from $30.1 million in 2012. The increase was primarily driven by a rise in personnel-related costs of approximately $2.5 million, including an increase of approximately $1.3 million in stock-based compensation costs associated with equity awards granted in current and prior years, as well as higher salaries and employee benefits resulting from increased headcount to support the high demand from our customers for professional services.

Operating Costs and Expenses

	Year Ended December 31,								
	2013			2012			Change		
	Amount	% of Revenues		Amount	% of Revenues		Amount	%	
	(Amounts in thousands)								
Operating costs and expenses:									
Research and development	$51,202	18.5	%	$42,276	19.4	%	$8,926	21.1	%
Sales and marketing	66,337	24.0	%	47,739	21.9	%	18,598	39.0	%
General and administrative	65,513	23.6	%	37,777	17.2	%	27,736	73.4	%
	$183,052	66.1	%	$127,792	58.5	%	$55,260	43.2	%

Total operating costs and expenses

Total operating costs and expenses. Total operating costs and expenses increased $55.3 million, or 43.2%, to $183.1 million in 2013 from $127.8 million in 2012. Costs increased in each department with the larger increases in general and administrative and sales and marketing.

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Research and development expenses. Research and development expenses increased $8.9 million, or 21.1%, to $51.2 million in 2013 from $42.3 million in 2012. The increase was primarily due to a rise in personnel-related costs of $6.3 million, which was attributable to an increase in headcount of 26% versus a year ago in order to accelerate the enhancement and broadening of our cloud-based solutions and increased stock-based compensation expense related to equity awards granted in the current year. Research and development expenses were also impacted by an increase in rent expense of $1.8 million associated with our new offices in New York City and Hammersmith, UK.

Sales and marketing expenses. Sales and marketing expenses increased $18.6 million, or 39.0%, to $66.3 million in 2013 from $47.7 million in 2012. The increase was primarily due to a rise in personnel-related costs of $15.1 million, driven by higher sales commission expense as a result of higher revenue versus a year ago, as well as increased salaries and employee benefits associated with higher staffing levels in support of the continuing expansion of our global sales organization. This increase also includes the impact of an additional $6.0 million in stock-based compensation expense associated with equity awards granted in current and prior years. The overall increase in sales and marketing expenses was also due in part to higher professional fees and travel and rent expenses.

General and administrative expenses. General and administrative expenses increased $27.7 million, or 73.4%, to $65.5 million in 2013 from $37.8 million in 2012. The increase was primarily driven by a $16.5 million increase in stock-based compensation costs primarily resulting from expense recognized in connection with the expected achievement of certain performance-based restricted stock units. The increase was also due to a rise in personnel-related costs resulting from increased headcount versus a year ago. General and administrative expenses were also impacted by an $0.8 million one-time charge associated with certain non income-related taxes in the current year, higher rent expense associated with our new offices in New York City and Hammersmith, UK, and higher professional fees and travel costs.

Income Taxes

Income tax expense was $1.7 million in 2013, reflecting an effective tax rate of 9%, as compared with $10.0 million and an effective tax rate of 36% in 2012. Our lower effective tax rate in 2013 was driven by federal and state research and development tax credits and reversal of valuation allowance associated with foreign tax credit, partially offset by limits on deductible executive compensation under Section 162(m) of the Internal Revenue Code. With regard to research and development tax credits, we recognized a one-time catch-up tax benefit of $1.2 million associated with the 2012 tax year in the first quarter of 2013 as a result of the American Taxpayer Relief Act of 2012, or ATRA, which was signed into law in January 2013. ATRA reinstated the research and development tax credit retroactively from January 1, 2012 to December 31, 2013.

Year Ended December 31, 2012 Compared with Year Ended December 31, 2011

Revenues

	Year Ended December 31,								
	2012			2011			Change		
	Amount	% of Revenues		Amount	% of Revenues		Amount	%	
	(Amount in thousands)								
Revenues:									
Subscription	$171,647	78.6	%	$144,436	78.3	%	$27,211	18.8	%
Professional services	46,700	21.4	%	40,023	21.7	%	6,677	16.7	%
Total revenues	$218,347	100.0	%	$184,459	100.0	%	$33,888	18.4	%

Total revenues. Total revenues increased $33.9 million, or 18.4%, to $218.3 million in 2012 from $184.4 million in 2011. The increase in revenues was due to a $27.2 million increase in subscription revenues and a $6.7 million increase in professional services revenues.

Subscription revenues. Subscription revenues increased $27.2 million, or 18.8%, to $171.6 million in 2012 from $144.4 million in 2011. The majority of the increase in subscription revenues was derived from increased activity among our existing large and midmarket customers, primarily resulting from new studies and renewals. We also benefited from strong demand from both new and existing customers for multiple solutions. The revenues from solutions other than Medidata Rave, or non-Rave revenues, grew significantly compared with prior

period. In 2012, we added 102 new customers to reach a total of 350 customers as of December 31, 2012. Revenues from new customers accounted for 41% of the total increase in subscription revenues. Subscription revenues also increased significantly from both international and domestic customers compared with the prior period. Revenues from customers based in North America and Asia grew 24% and 14%, respectively, whereas revenues from customers based in Europe grew 7%.

Professional services revenues. Professional services revenues increased $6.7 million, or 16.7%, to $46.7 million in 2012 from $40.0 million in 2011. The increase in professional services revenues was due to high demand for servicing of new solutions. The majority of our professional services were recognized as delivered in 2012 as compared with prior year, following our adoption of ASU No. 2009-13 on January 1, 2011. Our professional services revenues in 2011 included a $3.5 million one-time

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revenue acceleration associated with two customer contract renewals as a result of our adoption of ASU No. 2009-13, of which $1.4 million was accelerated from 2012. Excluding this impact, revenues from new customers accounted for 57% of the total increase in professional services revenues.

Cost of Revenues

	Year Ended December 31,								
	2012			2011			Change		
	Amount	% of Revenues		Amount	% of Revenues		Amount	%	
	(Amounts in thousands)								
Cost of revenues:									
Subscription	$32,600	14.9	%	$28,408	15.4	%	$4,192	14.8	%
Professional services	30,062	13.8	%	24,423	13.2	%	5,639	23.1	%
Total cost of revenues	$62,662	28.7	%	$52,831	28.6	%	$9,831	18.6	%

Total cost of revenues. Total cost of revenues increased $9.9 million, or 18.6%, to $62.7 million in 2012 from $52.8 million in 2011. The increase in total cost of revenues was due to a $4.2 million increase in cost of subscription revenues and a $5.7 million increase in cost of professional services revenues.

Cost of subscription revenues. Cost of subscription revenues increased $4.2 million, or 14.8%, to $32.6 million in 2012 from $28.4 million in 2011. The increase was primarily due to higher technology-related expenses associated with our multi-year software licenses and software-related service contracts entered into during 2012. The increase was also driven by higher hosting costs resulting from increased headcount and outside consultants to support our business growth.

Cost of professional services revenues. Cost of professional services revenues increased $5.7 million, or 23.1%, to $30.1 million in 2012 from $24.4 million in 2011. The increase was primarily driven by higher personnel-related costs resulting from an increase in headcount to support the high demand for servicing of new solutions. In addition, reimbursable travel and entertainment expenses were also higher due to an overall increase in professional services activities.

Operating Costs and Expenses

	Year Ended December 31,								
	2012			2011			Change		
	Amount	% of Revenues		Amount	% of Revenues		Amount	%	
	(Amounts in thousands)								
Operating costs and expenses:									
Research and development	$42,276	19.4	%	$29,568	16.0	%	$12,708	43.0	%
Sales and marketing	47,739	21.9	%	36,147	19.6	%	11,592	32.1	%
General and administrative	37,777	17.2	%	37,056	20.1	%	721	1.9	%
Litigation settlement	—	—	%	6,300	3.4	%	(6,300)	100.0	%
Total operating costs and expenses	$127,792	58.5	%	$109,071	59.1	%	$18,721	17.2	%

Total operating costs and expenses. Total operating costs and expenses increased $18.8 million, or 17.2%, to $127.8 million in 2012 from $109.0 million in 2011. Costs increased in each department with the larger increases in research and development and sales and marketing.

Research and development expenses. Research and development expenses increased $12.8 million, or 43.0%, to $42.3 million in 2012 from $29.5 million in 2011. The increase was primarily due to an increase in personnel-related costs of $10.2 million, which was attributable to significant increases in staffing levels in order to accelerate the enhancement and broadening of our offerings. The increase was also due to higher recruiting expenses driven by increased hiring activities, as well as higher consulting fees and rent expense. We believe our investments in research and development position us to capitalize on the opportunities we see in our markets.

Sales and marketing expenses. Sales and marketing expenses increased $11.6 million, or 32.1%, to $47.7 million in 2012 from $36.1 million in 2011. The increase was primarily due to higher personnel-related costs of $8.6 million, driven by higher sales incentive compensation costs as a result of higher sales performance versus a year ago. In addition, the increase was also due to higher staffing levels associated with the expansion of the reach and capability of our global sales organization in support of our overall growth initiatives. Higher travel-related costs and professional fees, in support of increased selling and marketing-related activities, and higher stock-based compensation costs, also impacted expenses.

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General and administrative expenses. General and administrative expenses increased $0.7 million, or 1.9%, to $37.8 million in 2012 from $37.1 million in 2011, excluding the effect of the 2011 litigation settlement charge.
The increase was primarily due to an increase in personnel-related costs, driven by higher incentive compensation costs, including stock-based compensation. The increase was partially offset by lower legal fees resulting from our legal settlement with Datasci in December 2011.

Income Taxes

Income tax expense was $10.0 million in 2012, reflecting an effective tax rate of 36%. Our effective tax rate differed from the federal statutory tax rate of 35% primarily due to state and local income taxes and undistributed earnings from foreign subsidiaries, partially offset by foreign tax credit utilization. In 2011, we recorded an income tax benefit of $16.4 million. In the fourth quarter of 2011, we determined that it was more likely than not that the benefit from the majority of our deferred tax assets would be realized against our estimated future taxable income. As a result, we recognized a one-time benefit of approximately $19.0 million from the reversal of the valuation allowance on the majority of our net deferred tax assets.

Liquidity and Capital Resources

Our principal sources of liquidity were cash, cash equivalents and marketable securities of $436.3 million at December 31, 2013 and $122.6 million at December 31, 2012. Cash and cash equivalents decreased $10.4 million during 2013, primarily impacted by net purchases of marketable securities, partially offset by proceeds from issuance of convertible senior notes and collections of accounts receivable. The decrease in cash and cash equivalents of $12.5 million in 2012 in comparison with 2011 was primarily due to timing of the collection of our accounts receivable and net purchases of marketable securities.

We manage our cash equivalents and marketable securities as a single investment portfolio that is intended to be available to meet our current cash requirements. Cash equivalents substantially consist of investments in money market funds. Marketable securities, which we classify as available-for-sale securities, primarily consist of high quality commercial paper, corporate bonds and U.S. government debt obligations. Marketable securities with remaining effective maturities of twelve months or less from the balance sheet date are classified as short-term; otherwise, they are classified as long-term on the consolidated balance sheet.

In August 2013, we issued $287.5 million of 1.00% convertible senior notes which will mature on August 1, 2018 unless earlier repurchased or converted. Upon conversion, we will deliver to the holders of the Notes either cash, shares of our common stock, or a combination thereof, at our election. If converted, we intend to settle the principal amount of the Notes in cash and any excess conversion value beyond the principal amount in shares of our common stock, cash, or a combination thereof. According to the terms of the indenture, the Notes are not convertible prior to January 1, 2014 and therefore are classified as long-term liabilities in our consolidated financial statements. For further information, see Note 9, “Debt,” to our consolidated financial statements included in Item 15 of this Annual Report on Form 10-K.

Our senior secured credit facility, as amended, or the Credit Facility, including a $10.0 million revolving line of credit, which was entered into in September 2008 matured on September 30, 2013. We were in compliance with all covenants under the Credit Facility, and the revolving line of credit remained undrawn throughout the entire term. We have decided not to renew our Credit Facility.

We believe that our cash flows from operations, cash and cash equivalents and highly liquid marketable securities will be sufficient to satisfy the anticipated cash requirements associated with our existing operations for the foreseeable future. In 2014, we expect to make approximately $10 to $12 million in capital expenditures, primarily related to the continuing enhancement of the infrastructure and capacity of our Houston data center, additional leasehold improvements to our corporate headquarters in New York City, and build-out of our new Tokyo office. We also plan to enhance our computer equipment across various corporate functions. We expect to acquire our capital equipment through purchases as opposed to capital lease arrangements. Our future capital expenditures and other cash requirements could be higher than we currently expect as a result of various factors, including any expansion of our business that we may complete. See “Risk Factors” in Item 1A of this Annual Report on Form 10-K.

Cash Flows

Cash Flows Provided By Operating Activities

Cash flows provided by operating activities during 2013 were $69.6 million, which consisted primarily of net income of $16.7 million, non-cash adjustments, including stock-based compensation of $36.1 million, depreciation and amortization of $6.9 million, amortization of debt discount of $4.2 million and amortization of discounts or premiums on marketable securities of $3.1 million, partially offset by excess tax benefit associated with equity awards of $4.5 million, as well as changes in working capital. The change in working capital includes an increase in accrued expenses and other of $7.7 million and a decrease in deferred revenue of $5.5 million. The increase in accrued expenses and other was primarily due to the timing of the payment of our liabilities. The fluctuation in deferred revenue resulted primarily from the timing of our customer billings and associated revenue recognition. Operating cash flow also benefited from our strong customer collections and higher billing activities.

Cash flows provided by operating activities during 2012 were $13.2 million, which consisted primarily of net income of $18.0 million, non-cash adjustments, including stock-based compensation of $10.9 million, depreciation and amortization of $7.9 million, excess tax benefit associated with equity awards of $3.7 million, and deferred income tax adjustment of $3.1 million, as well as changes in working capital. The change in working capital includes an increase in accounts receivable of $15.9 million and decline

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in deferred revenue of $11.5 million, offset slightly by an increase in accrued payroll and other compensation of $4.3 million. The fluctuation within accounts receivable was primarily due to the impact of higher billing activity, coupled with the timing of cash collections at year-end. The fluctuation in deferred revenue resulted from the continued impact of the timing of professional services revenue and the general decline in large upfront payments from subscription customers, consistent with expectations as our cloud-based business model continues to evolve.

Cash flows provided by operating activities during 2011 were $28.7 million, which consisted primarily of net income of $39.4 million, non-cash adjustments, including deferred income tax adjustment of $21.7 million and excess tax benefit of $3.3 million, depreciation and amortization of $7.8 million, and stock-based compensation of $8.8 million, as well as changes in working capital. The change in working capital includes a decline in deferred revenue of $21.9 million, offset somewhat by a decline in accounts receivable of $12.4 million. The fluctuation within accounts receivable and deferred revenue was primarily due to strong customer collections, the timing of revenue recognition associated with professional services and the general decline of large upfront payments from subscription customers, consistent with expectations as our cloud-based business model continues to evolve. Our cash flows provided by operating activities were also impacted by the $6.3 million litigation settlement payment to Datasci in December 2011.

Cash Flows Used In Investing Activities

Cash flows used in investing activities during 2013 were $362.7 million, which was related to $446.7 million in purchases of marketable securities, $30.5 million in purchases of furniture, fixtures and equipment, and $5.0 million net increase in restricted cash, partially offset by $119.5 million in proceeds from sale and maturity of marketable securities. We invested all of the net proceeds from the issuance of our convertible senior notes into marketable securities. High capital expenditures during the year were primarily driven by build-out costs for our new corporate headquarters in New York City and new office in Hammersmith, UK. For the year ended December 31, 2013, we did not acquire any equipment through capital lease arrangements.

Cash flows used in investing activities during 2012 were $34.7 million, which was related to $109.3 million in purchases of marketable securities and $5.7 million in purchases of furniture, fixtures and equipment, partially offset by $80.4 million in proceeds from sale and maturity of marketable securities. For the year ended December 31, 2012, we acquired an insignificant amount of equipment through capital lease arrangements.

Cash flows used in investing activities during 2011 were $3.8 million, which was related to $117.1 million in purchases of marketable securities, $5.2 million of cash consideration paid for the acquisition of Clinical Force, and $4.4 million in purchases of furniture, fixtures and equipment, partially offset by $122.8 million in proceeds from sale and maturity of marketable securities. For the year ended December 31, 2011, we acquired $0.2 million of equipment through capital lease arrangements.

Cash Flows Provided By Financing Activities

Cash flows provided by financing activities during 2013 were $282.8 million, which was primarily due to $287.5 million in proceeds from issuance of convertible senior notes, $10.5 million of proceeds from stock option exercises, and $4.5 million of excess tax benefit associated with equity awards, partially offset by $10.8 million relating to the acquisition of treasury stock in connection with the vesting of restricted stock awards and $8.1 million in payments of issue costs associated with convertible senior notes.

Cash flows provided by financing activities during 2012 were $8.9 million, which was primarily due to $9.3 million of proceeds from stock option exercises and $3.7 million of excess tax benefit associated with equity awards, partially offset by $3.4 million relating to the acquisition of treasury stock in connection with the vesting of restricted stock awards, $0.3 million of capital lease principal payments, and $0.3 million in acquisition-related earn-out payments.

Cash flows provided by financing activities during 2011 were $4.3 million, which was primarily due to $3.5 million of proceeds from stock option exercises and $3.3 million of excess tax benefit realized from equity awards vesting, partially offset by $1.7 million relating to the acquisition of treasury stock in connection with the vesting of restricted stock awards and $0.7 million of capital lease principal payments.

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Contractual Obligations, Commitments and Contingencies

The following table of our material contractual obligations as of December 31, 2013 summarizes the aggregate effect that these obligations are expected to have on our cash flows in the periods indicated (in thousands):

	Payments Due by Period				
	Total	2014	2015 - 2016	2017- 2018	2019 and later
Contractual Obligations:					
1.00% convertible senior notes	$287,500	$—	$—	$287,500	$—
Interest payments on convertible senior notes	14,295	2,795	5,750	5,750	—
Operating lease obligations	113,812	9,197	23,110	22,371	59,134
Capital lease obligations	82	48	34	—	—
Contingent consideration obligations	1,040	1,040	—	—	—
Letters of credit	5,094	5,094	—	—	—
Total	$421,823	$18,174	$28,894	$315,621	$59,134

Convertible Senior Notes

In August 2013, we issued at par value $287.5 million of 1.00% convertible senior notes. Interest is payable semi-annually in arrears on August 1 and February 1 of each year, beginning on February 1, 2014. The Notes mature on August 1, 2018 unless repurchased or converted in accordance with their terms prior to such date. The initial conversion rate is 17.2286 shares of our common stock per $1,000 principal amount of Notes, which is equivalent to an initial conversion price of approximately $58.05 per share of common stock. We intend to use the net proceeds from the offering for working capital and other general corporate purposes, including possible acquisitions of, or investments in, businesses, technologies, or products complementary to our business. See Note 9, “Debt,” to our consolidated financial statements included in Item 15 of this Annual Report on Form 10-K.

Letters of Credit

We had several outstanding standby letters of credit as of December 31, 2013 and 2012 in the total amount of $5.1 million and $3.9 million, respectively. These standby letters of credit were fully collateralized with our restricted cash as of December 31, 2013 and with our restricted cash and revolving credit line as of December 31, 2012.

Tax Uncertainties

ASC 740-10 provides that a tax benefit from an uncertain tax position may be recognized when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, on the basis of the technical merits. ASC 740-10 also provides guidance on measurement, derecognition, classification, interest and penalties, accounting in interim periods, disclosure, and transition.

We recognize tax liabilities in accordance with ASC 740-10 and we adjust these liabilities when our judgment changes as a result of the evaluation of new information not previously available. Because of the complexity of some of these uncertainties, the ultimate resolution may result in a payment that is materially different from our current estimate of the tax liabilities. These differences will be reflected as increases or decreases to income tax expense in the period in which new information is available. As of December 31, 2013, we had approximately $4.1 million of gross unrecognized tax benefits. At this time, we are unable to make a reasonably reliable estimate of the timing of payments in individual years in connection with these tax liabilities; therefore, such amounts are not included in the above contractual obligations table.

Legal Matters

On December 13, 2011, we entered into a settlement agreement with Datasci. Under the settlement agreement, we agreed to make a one-time, lump-sum payment to Datasci in the amount of $6.3 million to settle the claim and obtain an irrevocable, fully-paid, worldwide, non-exclusive license to the patent that was the subject of the claim by Datasci. The related payment was made on December 16, 2011, and the full amount of the settlement was included in our results of operations for the year ended December 31, 2011. Additional information concerning this lawsuit is provided in Note 15, “Commitments and Contingencies—Legal Matters,” to the consolidated financial statements included in Item 15 of this Annual Report on Form 10-K.

On March 4, 2011, DataTrak filed a complaint for alleged patent infringement against us in DataTrak International v. Medidata Solutions, C.A. No. 1:11-cv-00458 in the U.S. District Court for the Northern District of Ohio. The complaint asserts infringement of U.S. Patent No. 7,464,087, or the ’087 Patent, which claims a method and system for unifying data from a variety of sources. The complaint asserts that we infringe the patent owned without providing any details concerning the alleged infringement, and it seeks unspecified damages and injunctive relief. On October 28, 2011, we filed an application for ex parte reexamination of the ’087 Patent with the PTO. On December 16, 2011, the PTO issued a non-final rejection of the validity of all claims of the ’087 Patent. On

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the same date, the district court granted our motion to stay the case pending reexamination of the patent-in-suit. On April 6, 2012, the PTO issued its final office action rejecting all asserted claims of the '087 Patent. In July 2012, DataTrak filed a notice of appeal to the Board of Patent Appeals and Interferences which is still pending. If this appeal is not successful and the decision is ultimately upheld, it will result in the elimination of the litigation. We believe that we have valid defenses to the lawsuit and intend to defend it vigorously in the event the stay of the case is lifted. The probability of a favorable or unfavorable outcome to us in the event the stay of the case is lifted is unknown nor can the liability that could potentially result from a negative outcome be reasonably estimated. As a result, we have not recorded an accrual associated with this litigation. Additionally, given the status of the proceedings, the complexities of the facts in dispute and the multiple claims involved, we are unable to estimate a range of loss related to this litigation.

Effects of Recently Issued Accounting Standards

In May 2011, the Financial Accounting Standards Board, or FASB, issued ASU No. 2011-04, Fair Value Measurement: Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and IFRS. The amendments in this ASU generally represent clarification of ASC 820-10, Fair Value Measurements and Disclosures, but also include instances where a particular principle or requirement for measuring fair value or for disclosing information about fair value measurements has changed. This ASU is the result of joint efforts by the FASB and International Accounting Standards Board to develop a single, converged fair value framework and guidance with respect to how to measure fair value and what disclosures to provide about fair value measurements. ASU No. 2011-04 is effective for interim and annual periods beginning after December 15, 2011. We adopted ASU No. 2011-04 on January 1, 2012 and the adoption did not have a material impact on our consolidated financial statements.

In June 2011, the FASB issued ASU No. 2011-05, Presentation of Comprehensive Income, which removes the presentation options contained in ASC 220, Comprehensive Income, and requires entities to report components of comprehensive income in either a continuous statement of comprehensive income or two separate but consecutive statements. Under the two-statement approach, the first statement would include components of net income, which is consistent with the format of statement of operations used today, and the second statement would include components of other comprehensive income. In December 2011, the FASB issued ASU No. 2011-12, Deferral of the Effective Date for Amendments to Presentation of Reclassification of Items Out of Accumulated Other Comprehensive Income in ASU 2011-05, to defer indefinitely the effective date of the specific requirement to present items that are reclassified out of accumulated other comprehensive income to net income alongside their respective components of net income and other comprehensive income. All other provisions of ASU No. 2011-05 are effective for interim and annual periods beginning after December 15, 2011, and must be applied retrospectively for all periods presented in the financial statements. We adopted the applicable provisions of ASU No. 2011-05 on January 1, 2012. The adoption did not have a material impact on our consolidated financial statements other than merely a change in their presentation.

In February 2013, the FASB issued ASU No. 2013-02, Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income, which supersedes and replaces the presentation requirements for reclassifications out of accumulated other comprehensive income in ASU No. 2011-05 and ASU No. 2011-12. ASU No. 2013-02 is effective for reporting periods beginning after December 15, 2012. We adopted ASU No.2013-02 on January 1, 2013 and the adoption did not have a material impact on our consolidated financial statements.

In September 2011, the FASB issued ASU No. 2011-08, Testing Goodwill for Impairment, which simplifies how entities test goodwill for impairment. ASU No. 2011-08 permits an entity to assess qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount as a basis for determining whether it is necessary to perform the two-step goodwill impairment test. ASU No. 2011-08 is effective for interim and financial periods beginning after December 15, 2011, with early adoption permitted. We adopted ASU No. 2011-08 on January 1, 2012 and the adoption did not have a material impact on our consolidated financial statements.

In July 2013, the FASB issued ASU No. 2013-11, Presentation of an Unrecognized Tax Benefit When a Net Operating Loss Carryforward, a Similar Tax Loss, or a Tax Credit Carryforward Exists. This ASU amends ASC 740, Income Taxes, to require that an unrecognized tax benefit be presented in the financial statements as a reduction

to a deferred tax asset for a net operating loss carryforward, a similar tax loss, or a tax credit carryforward; to the extent that a net operating loss carry forward, a similar tax loss, or a tax credit carryforward does not exist at the reporting date, the unrecognized tax benefit should be presented in the financial statements as a liability and not combined with deferred tax assets. ASU No. 2013-11 is effective for interim and annual periods beginning after December 15, 2013, with early adoption permitted. We will adopt ASU No. 2013-11 on January 1, 2014 and the adoption is not expected to have a material impact on our consolidated financial statements.

Off-Balance Sheet Arrangements

We do not have any relationships with unconsolidated entities of financial partnerships, such as entities often referred to as structured finance or special purpose entities, which would have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. Other than our operating leases primarily relating to office space, we do not engage in off-balance sheet financing arrangements.

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Item 7A. Quantitative and Qualitative Disclosures about Market Risk

Interest Rate Sensitivity

We had unrestricted cash and cash equivalents totaling $22.3 million at December 31, 2013. Our cash equivalents are invested principally in money market funds. We also had investments in marketable securities, which we classify as available for sale securities, totaling $414.0 million at December 31, 2013. Substantially all of our marketable securities are fixed income securities, which primarily consist of high quality commercial paper, corporate bonds, and U.S. government debt obligations. The unrestricted cash and cash equivalents and marketable securities are held for working capital purposes. We manage our cash equivalents and marketable securities as a single investment portfolio that is intended to be available to meet our current cash requirements. We do not enter into investments for trading or speculative purposes. Due to the high credit ratings of these investments, we believe that we do not have any material exposure to changes in the fair value of our investment portfolio as a result of changes in interest rates.

Market Risk

In August 2013, we issued $287.5 million of 1.00% convertible senior notes, the Notes, which will mature on August 1, 2018 unless earlier repurchased or converted. Upon conversion we may deliver to the holders of the Notes either cash, shares of common stock, or a combination thereof, at our election. If converted, we intend to settle the principal amount of the Notes in cash and any excess conversion value beyond the principal amount in shares of our common stock, cash, or a combination thereof. According to the terms of the indenture, the Notes are not convertible prior to January 1, 2014 but may become convertible subsequent to January 1, 2014 depending on our future average stock price and other circumstances. Due to their non-convertible status as of December 31, 2013, the Notes are classified as long-term liabilities in our consolidated financial statements.

The Notes have a fixed annual interest rate of 1.00% and we therefore do not have economic interest rate exposure related to the Notes. However, the value of the Notes is exposed to interest rate risk. In general, the market value of our fixed interest rate Notes will increase as interest rates fall and decrease as interest rates rise. The Notes may also be affected by the volatility of our common stock price. As of December 31, 2013 the estimated fair value of the Notes was $365.1 million.

Exchange Rate Sensitivity

We have two separate exposures to currency fluctuation risk: subsidiaries outside the United States which use a foreign currency as their functional currency and are translated into U.S. dollars for consolidation, and non-U.S. dollar invoiced revenues.

Changes in foreign exchange rates for our subsidiaries that use a foreign currency as their functional currency are translated into U.S. dollars and result in cumulative translation adjustments, which are included in accumulated other comprehensive income (loss). We have translation exposure to various foreign currencies, including the Euro, British Pound Sterling and Japanese Yen. The potential translation loss estimated for 2013 resulting from a hypothetical 10% adverse change in quoted foreign currency exchange rates amounts to $1.5 million.

We generally invoice our customers in U.S. dollars. However, we invoice a portion of customers in foreign currencies, the majority of which is denominated in the Euro, British pound sterling, Australian dollar, and Canadian dollar. As such, the fluctuations in such currencies could impact our operating results.

Impact of Inflation

We do not believe that inflation has had a material effect on our business, financial condition or results of operations. If our costs were to become subject to significant inflationary pressures, we might not be able to offset these higher costs fully through price increases. Our inability or failure to do so could harm our business, operating results and financial condition.

Fair Value of Financial Instruments

ASC 825-10, Financial Instruments, requires disclosure about fair value of financial instruments. The carrying amounts of our financial instruments, which consist of cash and cash equivalents, receivables, accounts payable and accrued liabilities, approximate fair value because of the short maturity of these instruments. Fair values of marketable securities are based on unadjusted quoted market prices or pricing models using current market data that are observable either directly or indirectly. The fair value of contingent consideration is determined based on the likelihood of contingent earn-out payments. All methods of assessing fair value result in a general approximation of

value, and such value may never actually be realized.

Item 8. Financial Statements and Supplementary Data

The consolidated financial statements and supplementary data are listed under Part IV, Item 15, in this Annual Report on Form 10-K.

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

Not applicable.

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Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

As of December 31, 2013, an evaluation was performed with the participation of our Disclosure Committee and our management, including the Chief Executive Officer, or CEO, and the Chief Financial Officer, or CFO, of the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act). Disclosure controls and procedures are controls and procedures that are designed to ensure that information required to be disclosed in our reports filed or submitted under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures are also designed to ensure that such information is accumulated and communicated to our management, including our CEO and CFO, as appropriate to allow timely decisions regarding required disclosure. Based upon such evaluation, our CEO and CFO have concluded that our disclosure controls and procedures were effective as of December 31, 2013.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

All internal control systems, no matter how well designed, have inherent limitations, Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In making the assessment of the effectiveness of our internal control over financial reporting as of December 31, 2013, our management used the criteria set forth in Internal Control—Integrated Framework (1992) issued by the Committee of Sponsoring Organizations of the Treadway Commission, or COSO. Based on our assessment, we determined that our internal control over financial reporting was effective based on those criteria as of December 31, 2013.

Deloitte & Touche LLP, our independent registered public accounting firm, has performed an audit of the effectiveness of our internal control over financial reporting as of December 31, 2013, based on criteria established in Internal Control—Integrated Framework (1992) issued by the COSO. This audit is required to be performed in accordance with the standards of the Public Company Accounting Oversight Board (United States). Our independent auditors were given unrestricted access to all financial records and related data. The attestation reporting on the effectiveness of our internal control over financial reporting as of December 31, 2013 issued by our independent registered public accounting firm is included at the end of Item 9A in this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during our most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of
Medidata Solutions, Inc.
New York, New York

We have audited the internal control over financial reporting of Medidata Solutions, Inc. (the "Company") as of December 31, 2013, based on the criteria established in Internal Control—Integrated Framework (1992) issued by the Committee of Sponsoring Organizations of the Treadway Commission. The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

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

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

Because of the inherent limitations of internal control over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may not be prevented or detected on a timely basis. Also, projections of any evaluation of the effectiveness of the internal control over financial reporting to future periods are subject to the risk that the controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2013, based on the criteria established in Internal Control—Integrated Framework (1992) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated financial statements and financial statement schedule as of and for the year ended December 31, 2013 and our report dated February 24, 2014, expressed an unqualified opinion on those consolidated financial statements and financial statement schedule.

/s/ DELOITTE & TOUCHE LLP
New York, New York
February 24, 2014

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Item 9B. Other Information
Not applicable.

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PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this Item 10 is incorporated by reference to our Proxy Statement to be filed with the SEC within 120 days after the end of the fiscal year ended December 31, 2013 in connection with our 2014 Annual Meeting of Stockholders.

Item 11. Executive Compensation

The information required by this Item 11 is incorporated by reference to our Proxy Statement to be filed with the SEC within 120 days after the end of the fiscal year ended December 31, 2013 in connection with our 2014 Annual Meeting of Stockholders.

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

The information required by this Item 12 is incorporated by reference to our Proxy Statement to be filed with the SEC within 120 days after the end of the fiscal year ended December 31, 2013 in connection with our 2014 Annual Meeting of Stockholders.

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

The information required by this Item 13 is incorporated by reference to our Proxy Statement to be filed with the SEC within 120 days after the end of the fiscal year ended December 31, 2013 in connection with our 2014 Annual Meeting of Stockholders.

Item 14. Principal Accounting Fees and Services

The information required by this Item 14 is incorporated by reference to our Proxy Statement to be filed with the SEC within 120 days after the end of the fiscal year ended December 31, 2013 in connection with our 2014 Annual Meeting of Stockholders.

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PART IV

Item 15. Exhibits and Financial Statement Schedule

(a) We have filed the following documents as part of this Form 10-K:

1. Consolidated Financial Statements

2. Financial Statement Schedule

All other schedules are omitted because they are not required or the required information is shown in the financial statements or notes thereto.

3. Exhibits

The information required by this Item 15 is set forth on the exhibit index that follows the signature page of this report.

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SIGNATURES

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

MEDIDATA SOLUTIONS, INC.

By: /S/ TAREK A. SHERIF
Tarek A. Sherif
Chairman and Chief Executive Officer

Date: February 24, 2014

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

Signature	Title	Date
/S/ TAREK A. SHERIF Tarek A. Sherif	Chairman, Chief Executive Officer (Principal Executive Officer) and Director	February 24, 2014
/S/ CORY A. DOUGLAS Cory A. Douglas	Chief Financial Officer (Principal Financial and Chief Accounting Officer)	February 24, 2014
/S/ GLEN M. DE VRIES Glen M. de Vries	President and Director	February 24, 2014
/S/ CARLOS DOMINGUEZ Carlos Dominguez	Director	February 24, 2014
/S/ NEIL M. KURTZ, M. D. Neil M. Kurtz, M.D.	Director	February 24, 2014
/S/ GEORGE W. MCCULLOCH George W. McCulloch	Director	February 24, 2014
/S/ LEE A. SHAPIRO Lee A. Shapiro	Director	February 24, 2014
/S/ ROBERT B. TAYLOR Robert B. Taylor	Director	February 24, 2014

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EXHIBIT INDEX

		Incorporated by Reference		
Exhibit No.	Description	Form	File No.	Date Filed
3.1	Fourth Amended and Restated Certificate of Incorporation	S-1/A	333-156935	6/3/09
3.2	Amended and Restated Bylaws	S-1/A	333-156935	6/3/09
4.1	Specimen stock certificate	S-1/A	333-156935	6/3/09
4.2	Indenture, dated as of August 12, 2013, between Medidata Solutions, Inc. and Wells Fargo Bank, National Association, as Trustee	8-K	001-34387	8/6/13
4.3	Form of 1.00% Convertible Senior Notes due 2018	8-K	001-34387	8/6/13
10.1	Form of Officer and Director Indemnification Agreement	S-1/A	333-156935	6/3/09
10.2†	Medidata Solutions, Inc. Amended and Restated 2000 Stock Option Plan	S-1/A	333-156935	5/15/09
10.3†	Form of Medidata Solutions, Inc. Amended and Restated 2000 Stock Option Plan Option Agreement	S-1/A	333-156935	5/15/09
10.4†	Medidata Solutions, Inc. Second Amended and Restated 2009 Long-Term Incentive Plan	8-K	001-34387	5/2/13
10.5†	Form of Medidata Solutions, Inc. 2009 Long-Term Incentive Plan Stock Option Agreement	S-1/A	333-156935	6/3/09
10.6†	Form of Medidata Solutions, Inc. 2009 Long-Term Incentive Plan Restricted Stock Agreement	S-1/A	333-156935	6/3/09
10.7†	Form of Medidata Solutions, Inc. Restricted Stock Agreement	10-Q	001-34387	5/3/13
10.8†	Form of Medidata Solutions, Inc. Performance-Based Restricted Stock Unit Agreement	10-Q	001-34387	5/3/13
10.9†	Form of Medidata Solutions, Inc. Long-Term Performance-Based Restricted Stock Unit Agreement	10-Q	001-34387	5/3/13
10.10†	Medidata Solutions, Inc. 2014 Employee Stock Purchase Plan	S-8	333-192861	12/13/13
10.11†	Form of Executive Change in Control Agreement	S-1/A	333-156935	5/15/09
10.12†	Form of Amendment No. 1 to Executive Change in Control Agreements	8-K	001-34387	3/5/12
10.13	Lease between AGBRI Fannin L.P. and Medidata Solutions, Inc., dated March 13, 2006, as amended on March 8, 2007 and June 3, 2008, for space at the premises located at 1301 Fannin Street, Houston, Texas	S-1/A	333-156935	3/23/09
10.14	Agreement of Lease between the Rector, Church-Wardens and Vestrymen of Trinity Church in the City of New York and Medidata Solutions, Inc. dated October 19, 2012, for space at the premises located at 350 Hudson Street, New York, New York	8-K	001-34387	10/23/12
10.15*	Amendment No. 1, dated September 25, 2013, to Agreement of Lease between the Rector, Church-Wardens and Vestrymen of Trinity Church in the City of New York and Medidata Solutions, Inc.			
10.16*	Amendment No. 2, dated December 6, 2013, to Agreement of Lease between the Rector, Church-Wardens and Vestrymen of Trinity Church in the City of New York and Medidata Solutions, Inc.			
21.1	Subsidiaries of Medidata Solutions, Inc.	10-K	001-34387	3/16/11

23.1*	Consent of Deloitte & Touche LLP
31.1*	Rule 13a-14(a) or 15d-14 Certification of Chief Executive Officer
31.2*	Rule 13a-14(a) or 15d-14 Certification of Chief Financial Officer
32.1**	Certification of Chief Executive Officer pursuant to Exchange Act rules 13a-14(b) or 15d-14(b) and 18 U.S.C. Section 1350
32.2**	Certification of Chief Financial Officer pursuant to Exchange Act rules 13a-14(b) or 15d-14(b) and 18 U.S.C. Section 1350
101.INS*	XBRL Instance Document
101.SCH*	XBRL Taxonomy Extension Schema Document
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	XBRL Taxonomy Presentation Linkbase Document

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*	Filed herewith.
**	Furnished herewith.
†	Indicates a management contract or any compensatory plan, contract or arrangement.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of
Medidata Solutions, Inc.
New York, New York

We have audited the accompanying consolidated balance sheets of Medidata Solutions, Inc. (the "Company") as of December 31, 2013 and 2012, and the related consolidated statements of operations, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2013. Our audits also included the information included in the financial statement schedule listed in the Index at Item 15(a)2. These consolidated financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on the consolidated financial statements and financial statement schedule based on our audits.

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

In our opinion, such consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2013 and 2012, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2013, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, such financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Company's internal control over financial reporting as of December 31, 2013, based on the criteria established in Internal Control – Integrated Framework (1992) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 24, 2014, expressed an unqualified opinion on the Company's internal control over financial reporting.

/s/ DELOITTE & TOUCHE LLP
New York, New York
February 24, 2014

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MEDIDATA SOLUTIONS, INC.
CONSOLIDATED BALANCE SHEETS

	December 31, 2013	December 31, 2012
	(Amounts in thousands, except per share data)	
ASSETS		
Current assets:		
Cash and cash equivalents	$22,328	$32,683
Marketable securities	218,892	89,871
Accounts receivable, net of allowance for doubtful accounts of $1,055 and $747, respectively	45,534	42,359
Prepaid commission expense	3,615	2,281
Prepaid expenses and other current assets	13,511	8,042
Deferred income taxes	665	7,465
Total current assets	304,545	182,701
Restricted cash	5,118	388
Furniture, fixtures and equipment, net	41,229	10,474
Marketable securities – long-term	195,105	—
Goodwill	15,487	15,382
Intangible assets, net	904	1,708
Deferred income taxes – long-term	345	11,055
Other assets	10,620	2,923
Total assets	$573,353	$224,631
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$7,524	$2,998
Accrued payroll and other compensation	27,773	14,140
Accrued expenses and other	12,265	6,729
Deferred revenue	52,628	50,348
Total current liabilities	100,190	74,215
Noncurrent liabilities:		
Convertible 1.00% senior notes, net	229,705	—
Deferred revenue, less current portion	1,430	4,323
Deferred tax liabilities	5,651	624
Other long-term liabilities	10,564	3,378
Total noncurrent liabilities	247,350	8,325
Total liabilities	347,540	82,540
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, par value $0.01 per share; 5,000 shares authorized, none issued and outstanding	—	—
Common stock, par value $0.01 per share; 100,000 shares authorized, 55,018 and 52,810 shares issued; 53,634 and 52,078 shares outstanding, respectively (1)	550	528
Additional paid-in capital (1)	248,336	160,373
Treasury stock, 1,384 and 732 shares, respectively	(26,414)	(5,626)
Accumulated other comprehensive loss	(199)	(63)
Retained earnings (accumulated deficit)	3,540	(13,121)
Total stockholders' equity	225,813	142,091

Total liabilities and stockholders' equity	$573,353	$224,631

(1) Prior period results have been adjusted to reflect the two-for-one stock split which was effected in the form of a stock dividend in December 2013.

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

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MEDIDATA SOLUTIONS, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31,		
	2013	2012	2011
	(Amounts in thousands, except per share data)		
Revenues			
Subscription	$227,921	$171,647	$144,436
Professional services	48,928	46,700	40,023
Total revenues	276,849	218,347	184,459
Cost of revenues (1)(2)			
Subscription	37,053	32,600	28,408
Professional services	32,856	30,062	24,423
Total cost of revenues	69,909	62,662	52,831
Gross profit	206,940	155,685	131,628
Operating costs and expenses:			
Research and development (1)	51,202	42,276	29,568
Sales and marketing (1)(2)	66,337	47,739	36,147
General and administrative (1)	65,513	37,777	37,056
Litigation settlement	—	—	6,300
Total operating costs and expenses	183,052	127,792	109,071
Operating income	23,888	27,893	22,557
Interest and other income (expense):			
Interest expense	(5,925)	(138)	(123)
Interest income	555	280	293
Other (expense) income, net	(136)	34	238
Total interest and other (expense) income, net	(5,506)	176	408
Income before provision for income taxes	18,382	28,069	22,965
Provision for income taxes	1,721	10,049	(16,433)
Net income	$16,661	$18,020	$39,398
Earnings per share:			
Basic (3)	$0.33	$0.37	$0.83
Diluted (3)	$0.31	$0.35	$0.80
Weighted average common shares outstanding:			
Basic (3)	51,060	49,092	47,292
Diluted (3)	54,118	50,938	49,314
(1) Stock-based compensation expense included in cost of revenues and operating costs and expenses is as follows:			
Cost of revenues	$3,149	$1,751	$1,263
Research and development	2,397	1,049	745
Sales and marketing	8,859	2,871	2,014
General and administrative	21,738	5,243	4,798
Total stock-based compensation	$36,143	$10,914	$8,820
(2) Amortization of intangible assets included in cost of revenues and operating costs and expenses is as follows:			
Cost of revenues	$589	$1,276	$1,088
Sales and marketing	215	516	501
Total amortization of intangible assets	$804	$1,792	$1,589

(3) Prior period results have been adjusted to reflect the two-for-one stock split which was effected in the form of a stock dividend in December 2013.

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

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MEDIDATA SOLUTIONS, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Year Ended December 31,		
	2013	2012	2011
	(Amounts in thousands)		
Net income	$16,661	$18,020	$39,398
Other comprehensive income (loss):			
Foreign currency translation adjustments	(74)	282	(186)
Unrealized (loss) gain on marketable securities	(74)	31	(59)
Other comprehensive (loss) income	(148)	313	(245)
Income tax benefit (expense) related to unrealized gain or loss on marketable securities	12	(14)	—
Other comprehensive (loss) income, net of tax	(136)	299	(245)
Comprehensive income, net of tax	$16,525	$18,319	$39,153

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

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MEDIDATA SOLUTIONS, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

	Common Stock			Treasury Stock		Accumulated Other Comprehensive Income (Loss)	Retained Earnings (Accumulated Deficit)	Total
	Shares (1)	Amount (1)	Additional Paid-in Capital (1)	Shares (1)	Amount			
	(Amounts in thousands)							
Balance—January 1, 2011	48,282	$482	$121,774	104	$(474)	$ (117)	$ (70,539)	$51,126
Comprehensive income:								
Net income	—	—	—	—	—	—	39,398	39,398
Other comprehensive loss, net of tax	—	—	—	—	—	(245)	—	(245)
Total comprehensive income	—	—	—	—	—	(245)	39,398	39,153
Stock options exercised	866	8	3,467	—	—	—	—	3,475
Tax benefit associated with equity awards	—	—	3,255	—	—	—	—	3,255
Stock-based compensation	—	—	8,820	—	—	—	—	8,820
Nonvested restricted stock awards granted	958	10	(10)	—	—	—	—	—
Acquisition of treasury stock	—	—	—	154	(1,712)	—	—	(1,712)
Nonvested restricted stock awards forfeited	—	—	—	72	—	—	—	—
Balance—December 31, 2011	50,106	500	137,306	330	(2,186)	(362)	(31,141)	104,117
Comprehensive income:								
Net income	—	—	—	—	—	—	18,020	18,020
Other comprehensive income, net of tax	—	—	—	—	—	299	—	299
Total comprehensive income	—	—	—	—	—	299	18,020	18,319
Stock options exercised	1,890	20	9,308	—	—	—	—	9,328
Tax benefit associated with equity awards	—	—	2,852	—	—	—	—	2,852
Stock-based compensation	—	—	10,914	—	—	—	—	10,914
Nonvested restricted stock awards granted	814	8	(8)	—	—	—	—	—
Acquisition of treasury stock	—	—	—	242	(3,439)	—	—	(3,439)
Nonvested restricted stock awards forfeited	—	—	1	160	(1)	—	—	—
Balance—December 31, 2012	52,810	528	160,373	732	(5,626)	(63)	(13,121)	142,091
Comprehensive income:								
Net income	—	—	—	—	—	—	16,661	16,661
Other comprehensive loss, net of tax	—	—	—	—	—	(136)	—	(136)
Total comprehensive income	—	—	—	—	—	(136)	16,661	16,525

Stock options exercised	1,263	13	10,439	—	—	—	—	10,452
Tax benefit associated with equity awards	—	—	4,295	—	—	—	—	4,295
Stock-based compensation	—	—	36,143	—	—	—	—	36,143
Nonvested restricted stock awards granted	945	9	(9)	—	—	—	—	—
Acquisition of treasury stock	—	—	—	466	(20,787)	—	—	(20,787)
Nonvested restricted stock awards forfeited	—	—	1	186	(1)	—	—	—
Equity component of convertible senior notes, net	—	—	37,094	—	—	—	—	37,094
Balance—December 31, 2015	55,018	$550	$248,336	1,384	$(26,414)	$ (199)	$ 3,540	$225,813

(1) Prior period results have been adjusted to reflect the two-for-one stock split which was effected in the form of a stock dividend in December 2013.

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

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MEDIDATA SOLUTIONS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2013	2012	2011
Cash flows from operating activities:	(Amounts in thousands)		
Net income	$16,661	$18,020	$39,398
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	6,936	7,934	7,817
Stock-based compensation	36,143	10,914	8,820
Amortization of discounts or premiums on marketable securities	3,075	1,573	1,290
Deferred income taxes	(816)	3,123	(21,693)
Amortization of debt issuance costs	577	60	60
Amortization of debt discount	4,182	—	—
Excess tax benefit associated with equity awards	(4,531)	(3,655)	(3,255)
Contingent consideration adjustment	239	319	223
Provision for doubtful accounts	657	165	410
Loss on fixed asset disposal	241	—	—
Changes in operating assets and liabilities:			
Accounts receivable	1,249	(16,056)	11,986
Prepaid commission expense	(535)	(1,426)	874
Prepaid expenses and other current assets	2,099	(2,553)	1,725
Other assets	(3,697)	(1,372)	(505)
Accounts payable	(457)	(823)	885
Accrued payroll and other compensation	3,614	4,286	(1,678)
Accrued expenses and other	7,728	2,226	4,243
Deferred revenue	(5,465)	(11,471)	(21,908)
Other long-term liabilities	1,697	1,981	(24)
Net cash provided by operating activities	69,597	13,245	28,668
Cash flows from investing activities:			
Purchases of furniture, fixtures and equipment	(30,505)	(5,742)	(4,411)
Purchases of available-for-sale marketable securities	(446,745)	(109,320)	(117,098)
Proceeds from sale of available-for-sale marketable securities	119,470	80,370	122,759
Acquisition of business, net of cash acquired	—	—	(5,166)
Net (increase) decrease in restricted cash	(4,956)	—	144
Net cash used in investing activities	(362,736)	(34,692)	(3,772)
Cash flows from financing activities:			
Proceeds from exercise of stock options	10,452	9,328	3,475
Excess tax benefit associated with equity awards	4,531	3,655	3,255
Payment of acquisition-related earn-out	(380)	(251)	—
Repayment of obligations under capital leases	(75)	(268)	(725)
Proceeds from issuance of convertible senior notes	287,500	—	—
Payment of costs associated with issuance of convertible senior notes	(8,144)	—	—
Acquisition of treasury stock	(10,828)	(3,439)	(1,712)
Repayment of notes payable	(249)	(113)	—
Net cash provided by financing activities	282,807	8,912	4,293
Net (decrease) increase in cash and cash equivalents	(10,332)	(12,535)	29,189
Effect of exchange rate changes on cash and cash equivalents	(23)	4	—

Cash and cash equivalents—Beginning of period	32,683	45,214	16,025
Cash and cash equivalents—End of period	$22,328	$32,683	$45,214

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

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MEDIDATA SOLUTIONS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS, CONTINUED

	Year Ended December 31,		
	2013	2012	2011
Supplemental disclosures of cash flow information:	(Amounts in thousands)		
Cash paid during the period for:			
Interest	$27	$44	$53
Income taxes	$1,382	$2,575	$1,692
Noncash activities:			
Furniture, fixtures and equipment acquired through capital lease obligations	$—	$26	$195
Furniture, fixtures and equipment acquired but not yet paid for at period-end	$8,467	$1,769	$878
Issuance of notes payable in connection with acquisition-related earn-out payments	$341	$171	$—
Contingent consideration associated with acquisition of business, at fair value	$—	$—	$1,819

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

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MEDIDATA SOLUTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
1. ORGANIZATION
Medidata Solutions, Inc. (the “Company”) provides cloud-based solutions for clinical research in life sciences, designed to transform clinical development and increase the value of its customers' research investments. The Company’s solutions allow its customers to more efficiently and effectively design, plan and manage key aspects of the clinical trial process, including study and protocol design, trial planning and budgeting, site negotiation, clinical portal, trial management, randomization and trial supply management, clinical data capture and management, safety events capture, medical coding, clinical business analytics, and data flow and interoperability among multiple trial applications.
2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES
Basis of Presentation—The accompanying consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries prepared in conformity with accounting principles generally accepted in the United States of America (“U.S. GAAP”). All intercompany balances and transactions have been eliminated in consolidation. For purposes of these consolidated financial statements, the years ended December 31, 2013, 2012 and 2011 are referred to as 2013, 2012 and 2011, respectively.
All share and per share data for all periods presented herein reflects the impact of a two-for-one stock split which was effected in the form of a stock dividend in December 2013. (See Note 3, "Stockholders Equity.")
On the consolidated balance sheets, current and noncurrent capital lease obligations for prior periods have been reclassified to accrued expenses and other and other long-term liabilities, respectively, as capital lease obligations are no longer material to the Company's consolidated financial statements. On the consolidated statements of cash flows, the provision for doubtful accounts for prior periods has been isolated from the changes in accounts receivable to conform with the current presentation.
Use of Estimates—The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, including deferred revenue, and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results may differ from those estimates.
Revenue Recognition—The Company derives its revenues from two sources: (1) subscription revenues, which are comprised of subscription fees from customers accessing the Company's cloud-based solutions; and (2) related professional services, such as training, implementation, interface creation, trial configuration, data testing, reporting, procedure documentation, and other customer-specific services. The Company recognizes revenues when all of the following conditions are satisfied:

- persuasive evidence of an arrangement exists;
- service has been delivered to the customer;
- amount of the fees to be paid by the customer is fixed or determinable; and
- collection of the fees is reasonably assured or probable.

Subscription
The Company derives its subscription revenues primarily from multi-study and single-study arrangements that grant the customer the right to use its cloud-based solutions for a specified term. Multiple study arrangements grant the customer the right to manage a predetermined number of clinical trials simultaneously for a term typically ranging from one to five years. Single-study arrangements allow customers to use the Company’s solutions on a per trial basis. The Company recognizes revenues in accordance with Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) 605-10-S99, Revenue Recognition—SEC Materials. Revenues from subscription arrangements are recognized ratably over the term of the arrangement, beginning with the commencement of the arrangement term, which is generally aligned with the date the Company's cloud-based solutions are made available to the customer. The term of the arrangement includes optional renewal periods, if such renewal periods are likely to be exercised.
Professional Services

The Company also provides a range of professional services that its customers have the ability to utilize on an as-needed basis. Professional services do not result in significant alterations to the underlying solutions. When professional services are sold separate and apart from subscriptions, revenues are recognized using a proportional performance method or as services are rendered.

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MEDIDATA SOLUTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS, CONTINUED

In accordance with ASC 605-45, Revenue Recognition—Principal Agent Considerations, the Company included $0.7 million, $0.5 million and $0.5 million of reimbursable out-of-pocket expenses in professional services revenues in 2013, 2012 and 2011, respectively.

Multiple-Element Arrangements

The Company may also enter into multiple-element arrangements that combine a subscription to its cloud-based solutions with various professional services.

The Company accounts for its multiple-element arrangements pursuant to ASC 605-25, Revenue Recognition—Multiple-Element Arrangements.

To qualify as a separate unit of accounting under ASC 605-25, the delivered item must have value to the customer on a standalone basis. The significant deliverables under the Company’s multiple-element arrangements are subscription and professional services.

The Company determined that subscriptions to its various cloud-based solutions are individually considered separate units of accounting. In determining whether each of its solutions has standalone value, the Company considered factors including the availability of similar solutions from other vendors, its fee structure based on inclusion and exclusion of the solution, and its marketing and delivery of the solution. The service components of the Company's cloud-based solutions, including license, delivery and support are combined and accounted for as a separate unit of accounting. The Company uses estimated selling price ("ESP") to determine the selling price for its subscriptions when sold in multiple-element arrangements, as the Company does not have vendor-specific objective evidence ("VSOE") for these subscriptions and third-party evidence ("TPE") is not a practical alternative due to differences in features and functionality as compared with other companies’ offerings.

The Company also determined that the professional services have standalone value because those services are sold separately by other vendors. The Company uses ESP to determine the selling price for professional services when sold in multiple-element arrangements. Due to insufficient reliable pricing data, the Company is unable to establish VSOE. While other vendors offer similar services, they represent a small component of the vendor's total offerings. As a result, the Company is unable to reliably determine TPE on a standalone basis.

The Company determines its single-point ESP for subscriptions and professional services as follows:

- Subscription—the Company utilizes a pricing tool that provides price quotes for its subscription configurations. Any new and potential customer subscription arrangements must be priced through the utilization of the Company’s pricing tool. The Company has established an internal committee to monitor compliance and evaluate pricing data on a periodic basis. This evaluation includes the review of actual historical pricing data, market conditions consideration and the review of pricing strategies and practices. Any necessary pricing modification made to the pricing tool is supported by the result of such evaluation. Accordingly, the Company’s ESP for subscriptions is obtained from this pricing tool.
- Professional services—the Company evaluates internal historical professional services pricing data to determine average pricing rates by type of professional services rendered. These averages are utilized to determine ESP for professional services, and are reviewed and updated at least annually.
- The Company believes the effect of changes in either the selling price, or the method, or assumptions used to determine ESP for subscriptions and professional services will not have significant effect on the allocation of the arrangement consideration as the ESP for the above deliverables are based on historical pricing data.

The Company then allocates the arrangement consideration based on its relative ESP. Revenues for deliverables under subscriptions are recognized ratably over the term of the arrangement, beginning with the commencement of the arrangement term, which is generally aligned with the date the Company's cloud-based solutions are made available to the customer, assuming all other revenue recognition criteria are met. Revenues for deliverables under professional services are recognized using a proportional performance method or as services are rendered.

As required by ASC 605-25, the Company continues to account for a small number of multiple-element arrangements entered into prior to 2011 as a combined single unit of accounting, which includes subscription and professional services, under the pre-amended ASC 605-25 until such arrangements expire. The related revenues are recognized

ratably beginning with the commencement of the arrangement term, assuming all other remaining revenue recognition criteria are met. In addition, management's estimate of fair value for professional services is used to derive a reasonable approximation for presenting subscription revenues and professional services revenues separately in its consolidated financial statements.

Deferred Revenue

Deferred revenue consists of billings or payments received in advance of revenue recognition and is recognized as the revenue recognition criteria are met. Amounts that have been invoiced are initially recorded in accounts receivable and deferred revenue. The Company invoices its customers in accordance with the terms of the underlying contract, usually in installments in

advance of the related service period. Accordingly, the deferred revenue balance does not represent the total contract value of outstanding arrangements. Payment terms are typically net 30 to 45 days. Deferred revenue that is expected to be recognized during the subsequent 12-month period is recorded as current deferred revenue and the remaining portion as noncurrent deferred revenue.

In some instances, a customer elects to renew its subscription arrangements prior to the original termination date of the arrangement. The renewed subscription agreement provides support for in-process clinical trials, and includes the right to use the Company's cloud-based solutions for initial clinical studies. As such, the unrecognized portion of the deferred revenue associated with the original arrangement is aggregated with the consideration received upon renewal and recognized as revenues over the renewed term of the subscription arrangement.

Cost of Revenues—Cost of revenues primarily consists of costs related to delivering, maintaining and supporting the Company’s cloud-based platform and delivering professional services and support. These costs include salaries, benefits, bonuses and stock-based compensation for the Company’s data center and professional services staff. Cost of revenues also includes costs associated with the Company’s data center, including networking and related depreciation expense; as well as outside service provider costs, amortization expense and general overhead. The Company allocates general overhead, such as applicable shared rent and utilities, to cost of revenues based on relative headcount.

Software Development Costs—Costs incurred in the research and development of new software solutions and enhancements to existing software solutions are expensed as incurred under ASC 730, Research and Development. Internally developed software costs are capitalized under ASC 985-20, Software—Costs of Software to Be Sold, Leased, or Marketed, when technological feasibility is reached which is not until a working model is developed, and the functionality is tested and determined to be compliant with all federal and international regulations. As such, no internally developed software costs have been capitalized during 2013, 2012 or 2011.

Stock-Based Compensation—The Company follows ASC 718, Compensation—Stock Compensation to account for all of its stock-based compensation plans. The fair value of each stock option grant is estimated on the date of grant using the Black-Scholes pricing model. The Company uses stock price volatility of a group of peer companies as a basis for determining the expected volatility, together with the closing prices of the Company's publicly-traded stock. Management believes this is the best estimate of the expected volatility over the weighted-average expected life of its option grants. The Company has increased the weight of its own stock price volatility within the weighted average over time as sufficient trading history is established. As the Company does not have sufficient historical exercise data in the period since its stock began being publicly traded to provide a reasonable basis upon which to estimate the expected life, the Company uses the simplified method as allowed under Securities and Exchange Commission Staff Accounting Bulletin No. 110 for estimating the expected life of options as all of its options qualify as "plain-vanilla" options. The risk-free interest rate is based on the United States Treasury yield curve in effect at the time of the option grant with a maturity tied to the expected life of the options. No dividends are expected to be declared by the Company at this time. Compensation expense for stock options is recognized, net of estimated forfeitures, on a straight-line basis over the vesting period.

The fair value of each nonvested restricted stock award ("RSA") is measured as if the nonvested RSA was vested and issued on the grant date. Compensation expense for RSAs is recognized, net of estimated forfeitures, on a straight-line basis over the vesting period.

The fair value of each performance-based restricted stock unit ("PBRSU") whose vesting is dependent on the achievement of a market price target, or a "market condition," is estimated based upon the results of a Monte Carlo valuation model as of the grant date in accordance with accounting guidelines. Compensation expense related to PBRSUs with a market condition is recognized, net of estimated forfeitures, on a straight-line basis over the vesting period. The fair value of each PBRSU whose vesting is dependent on the satisfaction of a performance target, or a "performance condition," is measured as if the PBRSU was vested and issued on the grant date and adjusted in each reporting period for expected performance relative to the associated goals. Compensation expense related to PBRSUs with a performance condition is recognized when it is probable that the condition will be achieved, net of estimated forfeitures, on a straight-line basis over the vesting period. The compensation expense ultimately recognized will

equal the grant date fair value for the number of shares for which the performance condition has been satisfied.

Income Taxes—The Company uses the asset and liability method of accounting for income taxes, as prescribed by ASC 740, Income Taxes, which recognizes deferred tax assets and liabilities for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. Valuation allowances are recorded to reduce deferred tax assets when it is more likely than not that a tax benefit will not be realized.

All of the taxes on the Company's undistributed earnings from its foreign subsidiaries are included in U.S. current income taxes under Internal Revenue Code Section 956. As a result, no deferred income tax liability associated with the Company's undistributed earnings was recorded.

In addition, the Company follows ASC 740-10 for the determination of whether tax benefits claimed or expected to be claimed on a tax return should be recorded in the consolidated financial statements. Under ASC 740-10, the Company may recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position.

Comprehensive Income—ASC 220, Comprehensive Income, established standards for reporting and displaying comprehensive income and its components (revenues, expenses, gains and losses) in a full set of general-purpose financial statements. The Company's other comprehensive income results from foreign currency translation adjustments and unrealized holding gains and losses for investments on available-for-sale securities.

Cash and Cash Equivalents—The Company considers all money market accounts and other highly liquid investments purchased with original maturities of three months or less to be cash and cash equivalents. The fair value of cash and cash equivalents approximates the amounts shown on the consolidated financial statements.

Marketable Securities—In accordance with ASC 320-10, Investments-Debt and Equity Securities, and based on the Company's intentions regarding these instruments, the Company classifies substantially all of its fixed income marketable securities as available-for-sale. Accordingly, marketable securities are reported at fair value, with all unrealized holding gains and losses reflected in stockholders' equity. If it is determined that an investment has an other than temporary decline in fair value, the Company recognizes the investment loss in other income (expense), net in the consolidated statements of operations. The Company periodically evaluates the investments to determine if impairment charges are required.

Accounts Receivable—Accounts receivable are recorded at original invoice amount less an allowance that management believes will be adequate to absorb estimated losses on existing accounts receivable. The allowance is based on an evaluation of the collectability of accounts receivable and prior bad debt experience. Accounts receivable are written off when deemed uncollectible. Unbilled accounts receivable consist of revenue recognized in excess of billings, substantially all of which is expected to be billed and collected within one year. As of December 31, 2013 and 2012, unbilled accounts receivable of $9.5 million and $3.1 million, respectively, were included in accounts receivable on the Company's consolidated balance sheets.

Prepaid Commission Expense—For arrangements where revenue is recognized over the relevant contract period, the Company capitalizes related sales commissions that have been paid and recognizes these expenses over the period the related revenue is recognized. Commissions are payable to the Company's sales representatives upon payment from the customer. The Company amortized prepaid commissions of $11.1 million, $6.7 million and $6.7 million in 2013, 2012 and 2011, respectively, which are included within sales and marketing expense in the consolidated statements of operations. Prepaid commissions that will be recognized during the subsequent 12-month period are recorded as current prepaid commissions and the remaining portion included in other noncurrent assets.

Restricted Cash—Restricted cash represents deposits made to fully collateralize certain standby letters of credit issued in connection with office lease arrangements. Short-term restricted cash of $0.2 million is recorded in prepaid expenses and other current assets on the Company's consolidated balance sheets as of December 31, 2013.

Furniture, Fixtures and Equipment—Furniture, fixtures and equipment consists of furniture, computers, other office equipment, purchased software for internal use, leasehold improvements and construction in process recorded at cost. Depreciation is computed on the straight-line method over five years for furniture and fixtures, and three to five years for computer equipment and software. Leasehold improvements are amortized on a straight-line basis over the shorter of the lease term or their estimated useful lives. Improvements are capitalized while expenditures for repairs and maintenance are charged to expense as incurred. Construction in progress is not amortized into depreciation expense until it is placed into service.

Goodwill and Intangible Assets—The Company has generated goodwill and certain intangible assets from various acquisitions. Goodwill represents the excess of consideration paid over the fair value of net assets acquired in business combinations. Under ASC 350-20, Goodwill and Other Intangible Assets, goodwill is evaluated for impairment using a two-step process that is performed at least annually on October 1 of each year, or whenever events or circumstances indicate that impairment may have occurred. The first step is a comparison of the fair value of an internal reporting

unit with its carrying amount, including goodwill. If the fair value of the reporting unit exceeds its carrying value, goodwill of the reporting unit is not considered impaired and the second step is unnecessary. If the carrying value of the reporting unit exceeds its fair value, a second test is performed to measure the amount of impairment by comparing the carrying amount of the goodwill to a determination of the implied value of the goodwill. If the carrying amount of the goodwill is greater that the implied value, an impairment loss is recognized for the difference. The Company determined that there was no impairment of goodwill as of December 31, 2013 and 2012.

The implied value of goodwill is determined as of the test date by performing a purchase price allocation, as if the reporting unit had just been acquired, using currently estimated fair values of the individual assets and liabilities of the reporting unit, together with an estimate of the fair value of the reporting unit taken as a whole. The estimate of the fair value of the reporting unit is based upon information available regarding the Company’s market capitalization, prices of similar groups of assets, or other valuation techniques including present value techniques based upon estimates of future cash flow.

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MEDIDATA SOLUTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS, CONTINUED

The definite-lived intangible assets are recorded at cost less accumulated amortization. Amortization of acquired technology and database is computed using the straight-line method over their expected useful lives, which range from five to six years, and amortization of customer relationships and customer contracts is computed using an accelerated method which reflects the pattern in which the economic benefits derived from the related intangible assets are consumed or utilized.

Impairment of Long-Lived Assets—Long-lived assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of such asset may be impaired. The Company subjects long-lived assets to a test of recoverability based on undiscounted cash flows expected to be generated by such assets while utilized by the Company and cash flows expected from disposition of such assets. If the assets are impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the fair value of the assets. Management determined that there was no impairment of long-lived assets as of December 31, 2013 and 2012.

Convertible Notes—Pursuant to ASC 470-20, Debt—Debt with Conversion and Other Options, the Company separately accounts for the debt and conversion option components of its convertible senior notes, which permit cash settlement, in a manner that reflects the Company's nonconvertible borrowing rate at the time of issuance. The principal amount of the convertible senior notes is recorded as a liability. The value of the conversion option, net of equity issue costs, is recorded in stockholders' equity, and the offsetting debt discount is amortized to interest expense using the effective interest method over the term of the convertible senior notes. Additionally, debt issue costs are capitalized and amortized to interest expense over the term of the convertible senior notes on a straight-line basis, which approximates the effective interest method.

Treasury Stock—Shares of the Company’s common and preferred stock that are repurchased are recorded as treasury stock at cost and included as a component of stockholders’ equity.

Foreign Currency Translation—The financial statements of the Company’s foreign subsidiaries are translated in accordance with ASC 830-30, Foreign Currency Matters – Translation of Financial Statements. The reporting currency for the Company is the U.S. dollar. The functional currencies of the Company’s subsidiaries in the United Kingdom and Japan are the British pound sterling and the Japanese yen, respectively. Accordingly, the assets and liabilities of the Company’s foreign subsidiaries are translated into U.S. dollars using the exchange rate in effect at each balance sheet date. Revenue and expense accounts of the Company’s foreign subsidiaries are translated using an average rate of exchange during the period. Foreign currency translation adjustments are accumulated as a component of other comprehensive income (loss) as a separate component of stockholders’ equity. Gains and losses arising from transactions denominated in foreign currencies are primarily related to intercompany accounts that have been determined to be temporary in nature and accordingly, are recorded directly to the statement of operations. Foreign currency transaction gains (losses) are included in general and administrative expenses and were $(0.5) million in 2013, $0.2 million in 2012 and $(0.7) million in 2011.

Fair Value of Financial Instruments—The carrying amounts of cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities approximate fair value because of the short maturity of these instruments. Fair values of marketable securities are based on unadjusted quoted market prices or pricing models using current market data that are observable either directly or indirectly. All methods of assessing fair value result in a general approximation of value, and such value may never actually be realized. The fair value of contingent consideration is determined based on the likelihood of contingent earn-out payments.

Concentration of Credit Risk—Financial instruments which potentially subject the Company to concentrations of credit risk consist primarily of cash and cash equivalents, marketable securities and accounts receivable. The Company has policies that limit the amount of credit exposure to any one issuer. The Company performs ongoing credit evaluations of its customers and maintains an allowance for potential losses, but does not require collateral or other security to support customers’ receivables. The Company’s credit risk is further mitigated because its customer base is diversified both geographically and by industry sector.

In 2013, 2012 and 2011, there were no significant customers that exceeded 10% of the Company's total revenues.

Cash and cash equivalents and restricted cash are deposited with major financial institutions and, at times, such balances with any one financial institution may be in excess of FDIC-insured limits. As of December 31, 2013, $26.9 million in cash and cash equivalents and restricted cash were deposited in excess of FDIC-insured limits.

Indemnifications—The Company indemnifies its customers against claims that cloud-based solutions or services made available by the Company infringe upon a copyright, patent or the proprietary rights of others. Such indemnification provisions are disclosed in accordance with ASC 460-10-50-4, Disclosure About a Guarantor's Obligation, as further interpreted by ASC 460-10-55-31 – 34. In the event of a claim, the Company agrees to obtain the rights for continued use of the solutions for the customer, to replace or modify the solutions or services to avoid such claim or to provide a credit to the customer for the unused portion of the subscription. A liability may be recognized under ASC 450-20, Loss Contingencies, if information prior to the issuance of the consolidated financial statements indicates that it is probable that a liability has been incurred at the balance sheet date and the amount of the loss can be reasonably estimated.

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MEDIDATA SOLUTIONS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS, CONTINUED

Segment Information—As defined by ASC 280, Segment Reporting, the Company operates as a single segment, as the chief operating decision maker makes operating decisions and assesses performance based on one single operating unit. The Company recorded revenues in the following geographic areas in 2013, 2012 and 2011 (in thousands):

	2013	2012	2011
Revenues:			
United States of America	$197,785	$147,165	$118,024
Japan	32,595	28,482	25,208
Switzerland	12,682	11,598	10,522
United Kingdom	11,807	12,029	11,588
Other	21,980	19,073	19,117
Total	$276,849	$218,347	$184,459

Revenues by geographic area are presented based upon the country in which revenues were generated. No individual country other than the United States, Japan, the United Kingdom, and Switzerland represented 5% or more of net revenues for any of the periods presented.

The following table summarizes long-term assets by geographic area as of December 31, 2013, 2012 and 2011 (in thousands):

	2013	2012	2011
Long-term assets:			
United States of America	$254,453	$32,102	$33,697
United Kingdom	10,041	9,454	7,906
Japan	4,314	374	566
Total	$268,808	$41,930	$42,169

Recently Issued Accounting Pronouncements— In May 2011, the FASB issued ASU No. 2011-04, Fair Value Measurement: Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and IFRS. The amendments in this ASU generally represent clarification of ASC 820-10, Fair Value Measurements and Disclosures, but also include instances where a particular principle or requirement for measuring fair value or for disclosing information about fair value measurements has changed. This ASU is the result of joint efforts by the FASB and International Accounting Standards Board to develop a single, converged fair value framework and guidance with respect to how to measure fair value and what disclosures to provide about fair value measurements. ASU No. 2011-04 is effective for interim and annual periods beginning after December 15, 2011. The Company adopted ASU No. 2011-04 on January 1, 2012, and the adoption did not have a material impact on its consolidated financial statements.

In June 2011, the FASB issued ASU No. 2011-05, Presentation of Comprehensive Income, which removes the presentation options contained in ASC 220, Comprehensive Income, and requires entities to report components of comprehensive income in either a continuous statement of comprehensive income or two separate but consecutive statements. Under the two-statement approach, the first statement would include components of net income, which is consistent with the format of statement of operations used today, and the second statement would include components of other comprehensive income. In December 2011, the FASB issued ASU No. 2011-12, Deferral of the Effective Date for Amendments to Presentation of Reclassification of Items Out of Accumulated Other Comprehensive Income in ASU 2011-05, to defer indefinitely the effective date of the specific requirement to present items that are reclassified out of accumulated other comprehensive income to net income alongside their respective components of net income and other comprehensive income. All other provisions of ASU No. 2011-05 are effective for interim and annual periods beginning after December 15, 2011, and must be applied retrospectively for all periods presented in the financial statements. The Company adopted the applicable provisions of ASU No. 2011-05 on January 1, 2012. The adoption did not have a material impact on its consolidated financial statements other than a change in their presentation. In February 2013, the FASB issued ASU No. 2013-02, Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income, which supersedes and replaces the presentation requirements for

reclassifications out of accumulated other comprehensive income in ASU No. 2011-05 and ASU No. 2011-12. ASU No. 2013-02 is effective for reporting periods beginning after December 15, 2012. The Company adopted ASU No. 2013-02 on January 1, 2013, and the adoption did not have a material impact on its consolidated financial statements. In September 2011, the FASB issued ASU No. 2011-08, Testing Goodwill for Impairment, which simplifies how entities test goodwill for impairment. ASU No. 2011-08 permits an entity to assess qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount as a basis for determining whether it is necessary to perform the two-step goodwill impairment test. ASU No. 2011-08 is effective for interim and financial periods beginning after

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December 15, 2011, with early adoption permitted. The Company adopted ASU No. 2011-08 on January 1, 2012 and the adoption did not have a material impact on its consolidated financial statements.

In July 2013, the FASB issued ASU No. 2013-11, Presentation of an Unrecognized Tax Benefit When a Net Operating Loss Carryforward, a Similar Tax Loss, or a Tax Credit Carryforward Exists. This ASU amends ASC 740, Income Taxes, to require that an unrecognized tax benefit be presented in the financial statements as a reduction to a deferred tax asset for a net operating loss carryforward, a similar tax loss, or a tax credit carryforward; to the extent that a net operating loss carry forward, a similar tax loss, or a tax credit carryforward does not exist at the reporting date, the unrecognized tax benefit should be presented in the financial statements as a liability and not combined with deferred tax assets. ASU No. 2013-11 is effective for interim and annual periods beginning after December 15, 2013, with early adoption permitted. The Company will adopt ASU No. 2013-11 on January 1, 2014 and the adoption is not expected to have a material impact on its consolidated financial statements.

3. STOCKHOLDERS' EQUITY

Common Stock—Common stockholders are entitled to one vote for each share of common stock held. Common stockholders may receive dividends if and when the Board of Directors determines at its sole discretion.

In December 2013, the Company announced a two-for-one split of its common stock, effected in the form of a stock dividend. The record date for the stock split was December 2, 2013, and the additional shares were distributed on December 16, 2013. Each shareholder of record as of the close of business on the record date received one additional share of common stock for each share held.

Treasury Stock—From time to time, the Company grants nonvested RSAs and PBRSUs to its employees pursuant to the terms of the 2009 Long-Term Incentive Plan (the “2009 Plan”). Under the provisions of the 2009 Plan, the plan participants are allowed to cover their income tax withholding obligation through net shares upon the vesting of their RSAs or PBRSUs. On the date of vesting, the Company determines the number of shares to be withheld based on their fair value at the closing price of the Company’s common stock on the vesting date, in order to equal the amount of the plan participant's income tax withholding obligation. Those withheld shares are then held in the Company’s treasury stock at cost for future reissuance. In 2013 and 2012, the Company withheld 466,635 shares at an average price of $44.55 and 242,572 shares at an average price of $14.18, respectively, in connection with the vesting of its RSAs.

4. MARKETABLE SECURITIES

The Company manages its cash equivalents and marketable securities as a single investment portfolio that is intended to be available to meet the Company’s current cash requirements. Cash equivalents consist primarily of investments in money market funds. Marketable securities, which the Company classifies as available-for-sale securities, primarily consist of high quality commercial paper, corporate bonds and U.S. government debt obligations. Marketable securities with remaining effective maturities of twelve months or less from the balance sheet date are classified as short-term; otherwise, they are classified as long-term on the consolidated balance sheet.

The following table provides the Company’s marketable securities by security type as of December 31, 2013 and 2012 (in thousands):

	As of December 31, 2013			
	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Commercial paper and corporate bonds	$378,135	$122	$(196)	$378,061
U.S. government agency debt securities	35,934	3	(1)	35,936
Total	$414,069	$125	$(197)	$413,997
	As of December 31, 2012			
	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Commercial paper and corporate bonds	$63,682	$4	$(11)	$63,675

U.S. government agency debt securities	26,186	10	—	26,196
Total	$89,868	$14	$(11)	$89,871

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Contractual maturities of the Company's marketable securities as of December 31, 2013 and 2012 are summarized as follows (in thousands):

	As of December 31, 2013		As of December 31, 2012	
	Cost	Estimated Fair Value	Cost	Estimated Fair Value
Due in one year or less	$218,941	$218,892	$89,868	$89,871
Due in one to five years	195,128	195,105	—	—
Total	$414,069	$413,997	$89,868	$89,871

The following table provides the fair market value and the gross unrealized losses of the Company's marketable securities with unrealized losses that are not deemed to be other-than-temporarily impaired, aggregated by security type as of December 31, 2013 and 2012 (in thousands):

	In Loss Position for Less than 12 Months			
	As of December 31, 2013		As of December 31, 2012	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
Commercial paper and corporate bonds	$241,381	$(196)	$42,167	$(11)
U.S. government agency debt securities	10,910	(1)	—	—
Total	$252,291	$(197)	$42,167	$(11)

None of the Company's marketable securities has been in a continuous unrealized loss position for more than twelve months as of December 31, 2013 and 2012.

At December 31, 2013, the Company had $0.2 million of gross unrealized losses primarily due to a decrease in the fair value of certain corporate bonds. The Company regularly reviews its investment portfolio to identify and evaluate investments that have indications of possible impairment. Factors considered in determining whether a loss is temporary include:

- the length of time and extent to which fair value has been lower than the cost basis;
- the financial condition, credit quality and near-term prospects of the investee; and
- whether it is more likely than not that the Company will be required to sell the security prior to recovery.

As the Company has the ability and intent to hold these investments until a recovery of fair value, which may be maturity, the Company has determined that the gross unrealized losses on such investments at December 31, 2013 are temporary in nature. Accordingly, the Company did not consider that its investments in marketable securities were other-than-temporarily impaired as of December 31, 2013.

During 2013, 2012 and 2011, the Company recorded an insignificant amount of net realized gains or losses from the sale of marketable securities.

5. FAIR VALUE

ASC 820-10, Fair Value Measurements and Disclosures, establishes a framework for measuring fair value. That framework provides a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value and enhances disclosure requirements for fair value measurements. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements). The three levels of the fair value hierarchy under ASC 820-10 are described as follows:

Level 1 - Unadjusted quoted prices in active markets for identical assets or liabilities that the Company has the ability to access at the measurement date.

Level 2 - Other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly, including:

- quoted prices for similar assets or liabilities in active markets;
- quoted prices for identical or similar assets or liabilities in markets that are not active;

- inputs other than quoted prices that are observable for the asset or liability; and
- inputs that are derived principally from or corroborated by observable market data by correlation or other means.

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If the asset or liability has a specified (contractual) term, the Level 2 inputs must be observable for substantially the full term of the asset or liability.

Level 3 - Unobservable inputs to the valuation methodology that are significant to the fair value measurement for the asset or liability.

Financial assets and liabilities (excluding cash balances) measured at fair value on a recurring basis as of December 31, 2013 and 2012 are summarized as follows (in thousands):

	As of December 31, 2013 Fair Value Measurement Using				As of December 31, 2012 Fair Value Measurement Using			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets:								
Money market funds	$751	$—	$—	$751	$17,815	$—	$—	$17,815
Corporate bonds	—	—	—	—	—	3,313	—	3,313
Total cash equivalents	751	—	—	751	17,815	3,313	—	21,128
Commercial paper and corporate bonds	—	378,061	—	378,061	—	63,675	—	63,675
U.S. government agency debt securities	—	35,936	—	35,936	—	26,196	—	26,196
Total marketable securities	—	413,997	—	413,997	—	89,871	—	89,871
Total financial assets	$751	$413,997	$—	$414,748	$17,815	$93,184	$—	$110,999
Liabilities:								
Contingent consideration	$—	$—	$—	$—	$—	$—	$801	$801

The Company’s financial assets that are measured at fair value on a recurring basis are generally classified within Level 1 or Level 2 of the fair value hierarchy. Investments in money market funds have been classified as Level 1 since these securities are valued based upon $1.00 net asset value per share or unadjusted quoted prices in active markets. Investments in commercial paper, corporate bonds, and U.S. government agency debt securities have been classified as Level 2 since these securities are valued based on quoted prices in less active markets or significant inputs which are directly or indirectly observable. The valuation techniques used to measure the fair values of corporate bonds and U.S. government agency debt securities were derived from the inputs of market prices from multiple sources at each reporting period. The fair value was then determined based on a consensus price or a weighted average price for each security. For the remaining financial assets classified as Level 2, substantially all of the securities had a short maturity within one year and high credit ratings. Therefore, the valuation techniques used to measure the fair values were primarily derived from accretion of purchase price to its face value over the term of maturity or quoted market prices for similar instruments if available. During 2013 and 2012, there were no transfers of financial assets between Level 1 and Level 2.

The contingent consideration associated with acquisition-related earn-out payments related to the acquisition of Clinical Force Limited ("Clinical Force") in July 2011 (as described in Note 6, "Acquisition"), was classified as Level 3. The fair value of the contingent consideration was estimated by applying the income approach. That measure is based on significant inputs that are not observable in the market. The significant inputs in the Level 3 measurement not supported by market activity included the Company’s probability assessments of expected future cash flows associated with its related acquisition during the earn-out payments measurement period, appropriately discounted considering the uncertainties associated with the obligation, and calculated in accordance with the terms of the purchase agreement. Significant assumptions included a discount rate of 11%, which was derived from the Company’s estimated weighted average cost of capital of 16% net of a 5% risk adjustment.

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The following table provides a summary of changes in fair value of the Company's Level 3 financial liabilities for the two years ended December 31, 2013 (in thousands):

	Contingent Consideration
Balance as of January 1, 2012	$1,522
Change in fair value	319
Due to sellers (included in accrued expenses and other)	(1,040)
Balance as of December 31, 2012	801
Change in fair value	239
Due to sellers (included in accrued expenses and other)	(1,040)
Balance as of December 31, 2013	$—

For the years ended December 31, 2013 and 2012, the Company recorded adjustments of $0.2 million and $0.3 million, respectively, to the contingent consideration obligation as a result of the recurring measurement of its fair value at each reporting period. The fair value adjustments were recorded in general and administrative expenses in the Company's consolidated financial statements.

The carrying amounts of all other current financial assets and current financial liabilities reflected in the consolidated balance sheets approximate fair value due to their short-term nature. The Company does not have non-financial assets or liabilities that have been measured at fair value on a nonrecurring basis during the year ended December 31, 2013.

6. ACQUISITION

On July 1, 2011, the Company acquired Clinical Force, a UK-based provider of cloud-based clinical trial management systems ("CTMS"). In exchange for all outstanding shares of Clinical Force, the Company paid consideration consisting of $5.2 million cash at closing, plus additional performance-based earn-out payments of $2.6 million, which had a fair value of approximately $1.8 million as of the acquisition date. The earn-out payments were contingent upon the achievement of billing targets for the CTMS application, calculated over three measuring periods beginning at December 31, 2011 and continuing for each of the next two calendar years thereafter. For the measurement periods ended December 31, 2013, 2012, and 2011, the sellers earned payments of $1.1 million, $1.0 million, and $0.5 million respectively, based upon the achievement of the maximum billing targets for all three periods.

Clinical Force's operations have been included in the Company's consolidated financial statements since the date of acquisition on July 1, 2011.

7. GOODWILL AND INTANGIBLE ASSETS

The changes in the carrying amount of goodwill for the two years ended December 31, 2013 are as follows (in thousands).

Balance as of January 1, 2012	$15,164
Foreign currency translation adjustments	218
Balance as of December 31, 2012	15,382
Foreign currency translation adjustments	105
Balance as of December 31, 2013	$15,487

Intangible assets are summarized as follows (in thousands):

	As of December 31, 2013			As of December 31, 2012		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Acquired technology	$4,129	$(3,481)	$648	$4,094	$(2,935)	$1,159
Database	1,900	(1,900)	—	1,900	(1,821)	79
Customer relationships	2,074	(1,818)	256	2,064	(1,594)	470
Total	$8,103	$(7,199)	$904	$8,058	$(6,350)	$1,708

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Annual amortization for the next five years is expected to be as follows (in thousands):

Years ending December 31,	
2014	$551
2015	287
2016	47
2017	19
2018	—

8. FURNITURE, FIXTURES AND EQUIPMENT

Furniture, fixtures and equipment consist of the following (in thousands):

	As of December 31,	
	2013	2012
Computer equipment and purchased software	$35,123	$34,262
Leasehold improvements	24,989	4,283
Furniture and fixtures	4,129	1,356
Construction in progress	2,577	2,205
Total furniture, fixtures and equipment	66,818	42,106
Less: accumulated depreciation and amortization	(25,589)	(31,632)
Furniture, fixtures and equipment, net	$41,229	$10,474

Included in furniture, fixtures and equipment, net as of December 31, 2013 and 2012 are computer equipment and purchased software acquired under capital leases of approximately $0.1 million and $0.1 million, respectively, net of related accumulated depreciation of approximately $3.3 million and $10.5 million, respectively. Total depreciation expense was $6.1 million, $6.1 million, and $6.2 million for the years ended December 31, 2013, 2012, and 2011, respectively. These amounts include depreciation of assets acquired under capital leases of $0.1 million, $0.1 million, and $0.7 million in 2013, 2012, and 2011, respectively. Assets included in construction in progress as of December 31, 2013 primarily relate to costs capitalized in connection with the Company's build-out of its newly leased office in Tokyo, Japan. Assets included in construction in progress as of December 31, 2012 primarily related to costs capitalized in connection with build-outs of the Company's new offices in the United States and United Kingdom. Capitalized costs associated with construction in progress are not amortized into depreciation expense until the related offices are occupied.

9. DEBT

Senior Secured Credit Facility

The senior secured credit facility, as amended ("Credit Facility"), including a $10.0 million revolving line of credit, originally entered into by the Company in September 2008 matured on September 30, 2013. The Company was in compliance with all covenants under the Credit Facility and the revolving line of credit remained undrawn throughout the entire term. The Company has decided not to renew its Credit Facility. For the three years ended December 31, 2013, the Company's interest expense related to the unused revolving credit line fee was insignificant.

1.00% Convertible Senior Notes

In August 2013, the Company issued at par value $287.5 million of 1.00% convertible senior notes (the "Notes"). Interest is payable semi-annually in arrears on August 1 and February 1 of each year, beginning on February 1, 2014. The Notes mature on August 1, 2018 unless repurchased or converted in accordance with their terms prior to such date. The Company may not redeem the Notes prior to their maturity date. The Notes are the Company's senior unsecured obligations and are governed by an indenture dated August 12, 2013 between the Company, as issuer, and Wells Fargo Bank, National Association, as trustee.

Upon conversion of the Notes, the Company may choose to pay or deliver, as applicable, either cash, shares of the Company's common stock, or a combination thereof. If converted, holders of the Notes will receive, at the Company's election, cash and/or shares for the principal amount of the Notes as well as any amounts in excess of principal. The Company intends to settle the principal amount of the Notes in cash if converted.

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The initial conversion rate is 17.2286 shares of the Company's common stock per $1,000 principal amount of Notes, which is equivalent to an initial conversion price of approximately $58.05 per share of common stock. The conversion rate will be subject to adjustment upon occurrence of certain events, including, but not limited to, the issuance of stock dividends or payment of cash dividends on the Company's common stock (unless the holders of the Notes participate at the same time and under the same terms as the holders of common stock), or execution of a share split or share combination. Upon conversion, holders of the Notes will not receive any separate cash payment representing accrued and unpaid interest, unless conversion occurs after close of business on a regular record date and prior to the related interest payment date.

Holders may convert their Notes at their option at any time prior to the close of business on the business day immediately preceding February 1, 2018 only under the following circumstances:

- during any calendar quarter commencing after the calendar quarter ending on December 31, 2013 (and only during such calendar quarter), if the last reported sale price of the common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day;
- during the five business day period after any five consecutive trading day period (the "measurement period") in which the trading price per $1,000 principal amount of Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the Company's common stock and the conversion rate on such trading day; or
- upon the occurrence of certain corporate events described in the indenture governing the Notes.

On or after February 1, 2018 until close of business on the business day immediately preceding the maturity date, holders may convert their Notes at any time, regardless of the foregoing circumstances. If the Company undergoes a fundamental change as defined in the indenture governing the Notes, holders may require the Company to repurchase for cash all of their Notes at a repurchase price equal to 100% of the principal amount of the Notes to be repurchased plus accrued and unpaid interest.

In accounting for the issuance of the Notes, the Company separated the Notes into liability and equity components. The carrying amount of the liability component was calculated by measuring the fair value of a similar liability that does not have an associated convertible feature. The carrying amount of the equity component representing the conversion option was determined by deducting the fair value of the liability component from the par value of the Notes as a whole. The excess of the par value over the fair value of the debt represents the debt discount, which is amortized to interest expense over the term of the Notes. The equity component is not remeasured as long as it continues to meet the conditions for equity classification.

In accounting for the $8.1 million in issuance costs related to the Note issuance, the Company allocated the total amount incurred to the liability and equity components based on their relative values. The $6.4 million in issuance costs attributed to the liability component were capitalized and are amortized to interest expense over the term of the Notes. The $1.7 million in issuance costs attributed to the equity component were netted against the equity component in additional paid-in capital. As of December 31, 2013, the unamortized debt issuance costs related to the Notes were $5.9 million. Additionally, in connection with the Notes, the Company has recorded a net deferred tax liability of $23.1 million against its additional paid-in capital primarily resulting from a basis difference associated with the liability component that represents a temporary difference for income tax purposes.

The Notes consisted of the following as of December 31, 2013 (in thousands):

Equity component, net of equity issue costs	$60,222
Liability component:	
Principal	287,500
Less: unamortized debt discount	(57,795)
Net carrying amount	$229,705

The Notes are carried at face value less any unamortized discount, but require a disclosure of an estimate of fair value. As of December 31, 2013, the estimated fair value of the Notes is $365.1 million, which the Company considers to be

a Level 2 measurement because it is based upon a recent quoted bid price for the Notes, reflecting market activity in a less than active market. As of December 31, 2013, the Notes are not convertible; however, based on the closing price of the Company's common stock on December 31, 2013 of $60.50, which exceeds their initial conversion price of $58.05, the if-converted value of the Notes exceeds their principal amount by approximately $12.2 million.
As of December 31, 2013, the remaining life of the Notes is approximately 55 months.

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The following table sets forth total interest expense recognized related to the Notes for the year ended December 31, 2013 (in thousands except percentages):

Contractual interest expense	$1,118	
Amortization of debt issuance costs	533	
Amortization of debt discount	4,182	
Total	$5,833	
Effective interest rate	6.6	%

10. LEASE COMMITMENTS

The Company leases certain equipment and office space under noncancelable operating lease agreements, and certain equipment under noncancelable capital lease agreements, which provide for total future minimum annual lease payments as follows (in thousands):

Years ending December 31,	Operating Leases	Capital Leases (1)
2014	$9,197	$48
2015	12,011	34
2016	11,099	—
2017	11,111	—
2018	11,260	—
Thereafter	59,134	—
Total minimum lease payments	$113,812	$82

(1) The current and long-term portions of the Company's capital lease obligations have been recorded, net of amount representing interest, in accrued expenses and other and other long-term liabilities, respectively, on its consolidated balance sheets. Interest included in minimum annual capital lease payments was insignificant as of December 31, 2013.

Rent expense was approximately $8.7 million in 2013, $4.8 million in 2012, and $4.1 million in 2011. The Company had several outstanding standby letters of credit issued in connection with office leases in the amount of $5.1 million and $3.9 million as of December 31, 2013 and 2012, respectively. These standby letters of credit were fully collateralized with restricted cash as of December 31, 2013 and restricted cash and revolving credit line as of December 31, 2012.

11. STOCK-BASED COMPENSATION

In 2000, the Company adopted the 2000 Stock Option Plan (the “2000 Plan”). Options granted under the 2000 Plan were incentive stock options and nonqualified stock options. The majority of the options are vested 25% one year from the grant date and 75% ratably over the next three years and expire after ten years. Stock options were issued at the current estimated market price on the date of the grant. The Company does not intend to grant any additional stock options under the 2000 Plan.

In May 2009, the Company adopted the 2009 Plan which became effective upon the completion of the IPO in June 2009. The 2009 Plan is a comprehensive incentive compensation plan under which the Company can grant equity-based and other incentive awards to employees, directors, consultants and advisors. A total of 5.0 million shares of common stock was initially reserved for issuance under the 2009 Plan, which may be in the form of stock options, nonvested RSAs and other forms of stock-based incentives, including PBRSUs, stock appreciation rights and deferred stock rights. Stock option awards are issued with an exercise price equal to the current market price on the date of the grant and vest monthly over four years. During the restriction period, nonvested RSAs are not eligible for disposition but entitle the holder to all rights of a holder of common stock, including dividends and voting rights. Nonvested RSAs and their associated dividends are subject to forfeiture under certain circumstances. Since its inception the 2009 Plan has been twice amended and restated to increase the number of shares of common stock that the Company may issue under the 2009 Plan to a total of 11.0 million shares as of December 31, 2013.

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The Company accounts for stock-based compensation in accordance with ASC 718, Compensation — Stock Compensation. For the three years ended December 31, 2013, the components of stock-based compensation expense were summarized in the following table (in thousands):

	2013	2012	2011
Stock options	$4,143	$4,043	$4,238
Restricted stock awards	18,099	6,871	4,582
Performance-based restricted stock units	13,901	—	—
Total stock-based compensation	$36,143	$10,914	$8,820

Stock Options

The fair value of each stock option grant is estimated on the date of grant using the Black-Scholes pricing model with the following weighted-average assumptions:

	2013		2012		2011	
Expected volatility	43	%	46	%	50	%
Expected life	6 years		6 years		6 years	
Risk-free interest rate	1.48	%	0.96	%	1.76	%
Dividend yield	—		—		—	

The following table summarizes the status of the Company's stock options as of December 31, 2013, and changes during the year then ended (in thousands, except per share data):

	Number of Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (years)	Aggregate Intrinsic Value
Outstanding at January 1, 2013	3,578	$9.70		
Granted	473	42.04		
Exercised	(1,263)	8.28		
Forfeited	(111)	12.44		
Expired	(7)	3.57		
Outstanding at December 31, 2013	2,670	$16.00	7.31	$118,881
Exercisable at December 31, 2013	1,365	$8.99	6.09	$70,295
Vested and expected to vest at December 31, 2013	2,594	$15.56	7.26	$116,637

The weighted-average grant-date fair value of stock options granted during 2013, 2012 and 2011 was $18.06, $6.44 and $5.19 respectively. The total intrinsic value of stock options exercised during 2013, 2012 and 2011 was $38.4 million, $20.0 million and $6.2 million, respectively. As of December 31, 2013, there was a total of $12.5 million of unrecognized compensation cost related to all non-vested stock options granted, as recorded in accordance with ASC 718. This cost is expected to be recognized over a weighted-average remaining period of 2.56 years. The total fair value of stock options vested during 2013, 2012 and 2011 was $3.5 million, $3.9 million and $4.3 million, respectively.

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Restricted Stock Awards

The following table summarizes the status of the Company's nonvested RSAs as of December 31, 2013, and changes during the year then ended (in thousands, except per share data):

	Number of Shares	Weighted-Average Grant-Date Fair Value
Nonvested at January 1, 2013	1,945	$11.54
Granted	945	27.24
Vested	(1,032)	14.83
Forfeited	(186)	14.39
Nonvested at December 31, 2013	1,672	$18.06

As of December 31, 2013, there was a total of $23.1 million of unrecognized compensation cost related to all nonvested RSAs granted, as recorded in accordance with ASC 718. This cost is expected to be recognized over a weighted-average remaining period of 2.20 years. The total fair value of RSAs vested during 2013, 2012 and 2011 was $44.6 million, $8.9 million and $4.8 million, respectively.

Performance-Based Restricted Stock Units

In February 2013, the Company began granting PBRSUs to certain employees including executives. These PBRSUs are earned upon the achievement of certain targets over a specified performance period. Each PBRSU represents a contingent right to receive one share of the Company's common stock and its fair value is based on the closing price of the Company's stock on the date of grant and adjusted for expected performance. In the case of units which vest based in whole or in part upon achievement of a market condition related to the Company's stock price, a Monte Carlo valuation model is utilized. The number of PBRSUs ultimately earned can range from zero to a specified multiple of the original award, based upon the level of performance achieved during the associated performance period in relation to the predetermined performance goals. At each reporting period, management estimates the probable number of PBRSUs that will be earned, until the final achievement is determined at the close of the respective performance periods. The resulting compensation cost is amortized net of expected forfeitures over the associated vesting period. Of the original target number of PBRSUs granted during 2013, which assumes performance at 100% of targeted levels, (1) 227,076 PBRSUs ("Revenue PBRSUs") have performance conditions based on revenue for the year ending December 31, 2013 relative to the Company's revenue guidance and a minimum profitability condition, vesting annually over three years commencing on the first anniversary of the grant date, with the number of PBRSUs ultimately earned ranging from zero to 200% of the original award; (2) 113,538 PBRSUs ("TSR PBRSUs") have market conditions based on the Company's total stockholder return ("TSR") relative to that of the NASDAQ Composite Index for the year ending December 31, 2013, vesting annually over three years commencing on the first anniversary of the grant date, with the number of PBRSUs ultimately earned ranging from zero to 200% of the original award; (3) 645,528 PBRSUs ("Long-Term PBRSUs") have both performance and market conditions based on the Company's compound annual growth rate of revenue ("CAGR"), as defined in the grant agreement, and the Company's absolute TSR over the three-year performance period ending December 31, 2015, vesting in full on December 31, 2015, with the number of PBRSUs ultimately earned ranging from zero to 300% of the original award; and (4) 34,426 PBRSUs ("Sales PBRSUs") have performance conditions based on the achievement of certain sales performance goals for the six months ending December 31, 2013, vesting annually over four years commencing on the first anniversary of the grant date, with the number of PBRSUs ultimately earned ranging from zero to 100% of the original award.

The fair value of each of Revenue and Sales PBRSU is based upon the closing price of the Company's stock on the date of grant and adjusted each reporting period based on expected performance relative to the associated performance conditions.

The fair value of each TSR and Long-Term PBRSU is estimated as of the date of grant based upon evaluation of expected performance relative to the associated market condition using a Monte Carlo valuation model with the following weighted-average assumptions:

	2013 TSR PBRSUs		2013 Long-Term PBRSUs	
Expected volatility - Medidata	39	%	39	%
Expected volatility - NASDAQ Composite Index	15	%	N/A	
Risk-free interest rate	0.16	%	0.39	%
Expected term	1.00 year		2.86 years	

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With regard to the Long-Term PBRSUs, whose vesting is dependent on a performance condition related to the Company's CAGR and a market condition related to the Company's TSR over the three-year period ending December 31, 2015, the Company determined during the fourth quarter of 2013 that the achievement of the requisite performance condition is probable. As a result, the Company began recognizing the related expense in the fourth quarter of 2013.

The following table summarizes the status of the Company's PBRSUs based upon expected performance as of December 31, 2013, and changes during the year then ended (in thousands, except per share data):

	Revenue (1)	TSR (1)	Long-Term	Sales (1)	Total Number of Shares	Weighted-Average Grant-Date Fair Value
Nonvested at January 1, 2013	—	—	—	—	—	$ —
Granted (based on performance at 100% of targeted levels)	227	113	646	34	1,020	29.81
Adjustment related to expected performance	227	114	407	(25)	723	28.35
Vested	—	—	—	—	—	—
Forfeited	—	—	(41)	—	(41)	30.07
Nonvested at December 31, 2013	454	227	1,012	9	1,702	$ 29.18

(1) The performance period for these PBRSUs ended on December 31, 2013; subsequent to December 31, 2013, these PBRSUs are now subject only to time-based vesting over their corresponding terms.

For 2013, the Company recognized $9.3 million of expense related to the Long-Term PBRSUs, $3.3 million of expense related to the Revenue PBRSUs, $1.2 million, of expense related to the TSR PBRSUs, and $0.1 million of expense related to the Sales PBRSUs. As of December 31, 2013, there was a total of $33.1 million of unrecognized compensation cost related to all nonvested PBRSUs, as recorded in accordance with ASC 718. This cost is expected to be recognized over a weighted-average remaining period of 2.10 years.

12. ACCUMULATED OTHER COMPREHENSIVE LOSS

The changes in the balances of each component of accumulated other comprehensive loss during the two years ended December 31, 2013 are as follows (in thousands):

	Foreign currency translation adjustments	Unrealized gains (losses) on available for sale securities	Total
Balance as of January 1, 2012	$(335)	$(27)	$(362)
Other comprehensive income, net of tax	$282	$17	$299
Balance as of December 31, 2012	$(53)	$(10)	$(63)
Other comprehensive loss, net of tax	(74)	(62)	(136)
Balance as of December 31, 2013	$(127)	$(72)	$(199)

For the years ended December 31, 2013 and 2012 reclassifications of items from accumulated other comprehensive loss to net income were insignificant.

13. EARNINGS PER SHARE

The Company follows ASC 260, Earnings Per Share, in calculating earnings per share. Basic earnings per share is calculated by dividing net income available to common stockholders by the weighted-average number of shares outstanding during the period. The holders of unvested RSAs do not have nonforfeitable rights to dividends or dividend equivalents and therefore, such vested awards do not qualify as participating securities and are excluded from the basic earnings per share calculation. Diluted earnings per share includes the determinants of basic net income per share and, in addition, gives effect to the potential dilution that would occur if securities or other contracts to issue common stock are exercised, vested or converted into common stock unless they are anti-dilutive.

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All share and per share data for all periods presented reflects the impact of a two-for-one stock split which was effected in the form of a stock dividend in December 2013. A reconciliation of the numerator and denominator of basic earnings per share and diluted earnings per share for the three years ended December 31, 2013 is shown in the following table (in thousands, except per share data):

	2013	2012	2011
Numerator			
Numerator for basic earnings per share:			
Net income	$16,661	$18,020	$39,398
Denominator			
Denominator for basic earnings per share:			
Weighted average common shares outstanding	51,060	49,092	47,292
Denominator for diluted earnings per share:			
Dilutive potential common shares:			
Stock options	1,581	1,290	1,520
Nonvested restricted stock awards	1,030	556	502
Performance-based restricted stock units	447	—	—
Weighted average common shares outstanding with assumed conversion	54,118	50,938	49,314
Basic earnings per share	$0.33	$0.37	$0.83
Diluted earnings per share	$0.31	$0.35	$0.80
Total number of anti-dilutive shares of stock options, nonvested restricted stock awards, and performance-based restricted stock units excluded from calculation of diluted earnings per share	237	716	972

The effect of the Notes (see Note 9, "Debt") issued in August 2013, if any, will be reflected in diluted earnings per share using the treasury stock method as the Company intends to settle the principal amount of the Notes in cash upon conversion. During the year ended December 31, 2013, the average price of the Company's stock was below the conversion price of the Notes; as a result the Notes were not dilutive for this period.

14. INCOME TAXES

The components of income tax expense (benefit) for the three years ended December 31, 2013 are as follows (in thousands):

	2013	2012	2011
Current expense:			
Federal and state	$1,372	$5,827	$4,509
Foreign	1,165	1,099	751
Current expense	2,537	6,926	5,260
Deferred expense (benefit):			
Federal and state	2,381	3,505	3,355
Foreign	(439)	(178)	(124)
Valuation allowance	(2,758)	(204)	(24,924)
Deferred (benefit) expense	(816)	3,123	(21,693)
Total income tax expense (benefit)	$1,721	$10,049	$(16,433)

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A reconciliation of income tax expense (benefit) and the amount computed by applying the statutory federal income tax rate to the income before provision for income taxes is as follows (in thousands):

	2013	2012	2011
Tax computed at federal statutory rate	$6,434	$9,824	$8,038
Increase (decrease) in income taxes resulting from:			
Valuation allowance	(2,758)	(204)	(24,558)
U.S. R&D tax credit	(2,833)	—	(2,516)
Recognition of uncertain tax position	269	461	342
Stock-based compensation	(151)	(40)	353
Undistributed earnings from foreign subsidiaries	1,737	1,275	665
State tax expense, net of federal benefit	667	747	1,026
Non-deductible bonuses	120	102	184
Excess compensation deduction	950	—	—
Non-deductible items	(3)	67	(6)
Foreign tax rate differential	(339)	(205)	39
Domestic production activities deduction	(665)	(232)	—
Foreign tax credit	(1,737)	(1,051)	—
Other	30	(695)	—
Total income tax expense (benefit)	$1,721	$10,049	$(16,433)

As of December 31, 2013 and 2012, the components of deferred tax assets (liabilities) are as follows (in thousands):

	As of December 31,	
	2013	2012
Assets:		
Net operating loss carryforwards	$4,961	$5,769
Deferred revenue	2,502	7,517
Depreciable and amortizable assets	6,792	6,407
U.S. and state R&D tax credits	403	281
Foreign tax credit	107	2,758
Stock based compensation	9,305	3,651
Debt issuance costs	618	—
Other	5,817	2,033
Gross deferred tax assets	30,505	28,416
Liabilities:		
Depreciable and amortizable assets	(12,234)	(6,945)
Management fee	(222)	(310)
Foreign exchange translation	(139)	(153)
Convertible notes	(22,196)	—
Other	(355)	(375)
Gross deferred tax liabilities	(35,146)	(7,783)
Less: valuation allowance	—	(2,758)
Net deferred tax (liabilities) assets	$(4,641)	$17,875
Net current deferred tax assets	$665	$7,465
Net long-term deferred tax assets	345	11,055
Net current deferred tax liabilities (included in accrued expenses and other)	—	(21)
Net long-term deferred tax liabilities	(5,651)	(624)
Net deferred tax (liabilities) assets	$(4,641)	$17,875

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Income before provision for income taxes by jurisdiction is as follows (in thousands):

	2013	2012	2011
U.S. income	$14,549	$25,064	$21,731
Non-U.S. income	3,833	3,005	1,234
Total income before provision for income taxes	$18,382	$28,069	$22,965

As of December 31, 2013 and 2012, the Company had approximately $36.6 million and $12.0 million, respectively, of federal net operating loss carryforwards ("NOLs") available to offset future taxable income expiring from 2020 through 2033. This federal NOL included $24.5 million attributable to the excess tax deductions on equity award activity which were not included in the recorded deferred tax assets as of December 31, 2013. The tax benefit of this deduction will be recognized through additional paid-in capital at such time as the federal NOL is used to reduce income taxes payable. The total amount of state and local NOLs in aggregate was $22.1 million and $12.2 million as of December 31, 2013 and 2012, respectively, expiring from 2020 through 2033. Certain NOLs obtained through the acquisition of Fast Track in 2008 are subject to limitations under Section 382 of the Internal Revenue Code.

At December 31, 2013 and 2012, the Company also had approximately $8.8 million and $4.2 million, respectively, of tax credits which were not included in the recorded deferred tax assets. The use of such credits was deferred by the excess tax deductions related to equity compensation. The tax benefit of these credits will be recognized through additional paid-in capital at such time as the credits are used to reduce income taxes payable.

As of December 31, 2013 the Company had no valuation allowance against its deferred tax assets. As of December 31, 2012, the Company maintained a valuation allowance of $2.8 million against its deferred tax asset related to foreign tax credits, as its future utilization remained uncertain. The net decreases in the valuation allowance of $2.8 million and $0.2 million in 2013 and 2012, respectively, were due primarily to the utilization of foreign tax credit carryforwards. In the fourth quarter of 2011, the Company determined that it was more likely than not that it would realize the benefit from the majority of its deferred tax assets. As a result, the Company recorded a $24.9 million reduction in valuation allowance, including a $19.0 million one-time tax benefit from the reversal of valuation allowance on the majority of the Company's net deferred tax assets.

The Company has recorded its unrecognized tax benefits in accrued expenses and other on the accompanying consolidated balance sheet. The aggregate changes in the balance of the Company's gross unrecognized tax benefits for the three years ended December 31, 2013 are as follows (in thousands):

	2013	2012	2011
Gross unrecognized tax benefits as of beginning of period	$2,946	$2,109	$—
Increases based on tax positions related to the current year	429	229	521
Increases related to tax positions from prior fiscal years	734	608	1,588
Total gross unrecognized tax benefits as of end of period	$4,109	$2,946	$2,109

As of December 31, 2013, there were $4.1 million of unrecognized benefits that would affect the Company's effective tax rate, if recognized.

The Company recognizes accrued interest and penalties, if any, related to uncertain tax positions through income tax expense. Recognized interest and penalties were $0.2 million for 2013 and 2012 and insignificant for 2011. The Company believes that its income tax positions and deductions will be sustained on audit and does not anticipate any adjustments that will result in a material change to its financial position during the next twelve months. The Company's federal income tax returns for the 2000 through 2012 tax years remain open to examination by the IRS in their entirety, except for its 2007 and 2010 tax returns. The examination of the Company's 2007 and 2010 federal tax returns were completed in 2010 and 2013, respectively. No adjustments to the tax returns were proposed by the IRS in either examination. In addition, the Company's state income tax returns for the 2000 through 2012 tax years also remain open to examination by state taxing authorities.

15. COMMITMENTS AND CONTINGENCIES

401(k) Plan—The Company has a pre-tax savings and profit sharing plan (the "401(k) Plan") under Section 401(k) of the Internal Revenue Code for substantially all employees. Under the 401(k) Plan, eligible employees are able to

contribute up to 15% of their compensation not to exceed the maximum IRS annual deferral amount. The Company provides a 50% match of the first 4% of eligible compensation contributed each period by the employees. The maximum match by the Company is therefore 2% of eligible compensation. The Company incurred expense of $1.4 million, $1.2 million and $0.9 million relating to matching contributions in 2013, 2012 and 2011, respectively.

Legal Matters—The Company is subject to legal proceedings and claims that arise in the ordinary course of business. From time to time, third parties have asserted and may in the future assert intellectual property rights to technologies that are

important to the Company's business and have demanded and may in the future demand that the Company license their technology. The Company records an estimated liability for these matters when an adverse outcome is considered to be probable and can be reasonably estimated. Although the outcome of the litigation cannot be predicted with certainty and some lawsuits, claims, or proceedings may be disposed of unfavorably to the Company, which could materially and adversely affect its financial condition or results of operations, the Company does not believe that it is currently a party to any material legal proceedings.

On December 13, 2011, the Company entered into a settlement agreement with Datasci, LLC ("Datasci"). The settlement provided for mutual release and dismissal of all actions between the parties, and provided the Company with a non-exclusive, fully paid perpetual license to utilize the patent at issue. Under the settlement, the Company agreed to make a one-time lump sum payment to Datasci in the amount of $6.3 million to settle the claim. The entire settlement amount of $6.3 million was included in the Company's consolidated results of operations for the year ended December 31, 2011.

On March 4, 2011, DataTrak International, Inc. ("DataTrak") filed a complaint for alleged patent infringement against the Company in DataTrak International v. Medidata Solutions, C.A. No. 1:11-cv-00458 in the U.S. District Court for the Northern District of Ohio. The complaint asserts infringement of U.S. Patent No. 7,464,087 (the "'087 Patent"), which claims a method and system for unifying data from a variety of sources. The complaint asserts that the Company infringes upon the patent owned without providing any details concerning the alleged infringement, and it seeks unspecified damages and injunctive relief. On October 28, 2011, the Company filed an application for ex parte reexamination of the '087 Patent with the U.S. Patent and Trademark Office (the "PTO"). On December 16, 2011, the PTO issued a non-final rejection of the validity of all claims of the '087 Patent. On the same date, the district court granted the Company's motion to stay the case pending reexamination of the patent-in-suit. On April 6, 2012, the PTO issued its final office action rejecting all asserted claims of the '087 Patent. In July 2012, DataTrak filed a notice of appeal to the Board of Patent Appeals and Interferences which is still pending. If this appeal is not successful and the decision is ultimately upheld, it will result in the elimination of the litigation. The Company believes that it has valid defenses to the lawsuit and intends to defend itself vigorously in the event the stay of the case is lifted. The probability of a favorable or unfavorable outcome to the Company in the event the stay of the case is lifted is unknown nor can the liability that could potentially result from a negative outcome be reasonably estimated. As a result, the Company has not recorded any accrual associated with this litigation. Additionally, given the status of the proceedings, the complexities of the facts in dispute and the multiple claims involved, the Company is unable to estimate a range of loss related to this litigation.

Contractual Warranties—The Company typically provides contractual warranties to its customers covering its solutions and services. To date, any refunds provided to customers have been immaterial.

Change in Control Agreements—In January 2009, the Company entered into change in control agreements with its chief executive officer and certain other executive officers. These agreements provide for payments to be made to such officers upon involuntary termination of their employment by the Company without cause or by such officers for good reason as defined in the agreements, within a period of 2 years following a change in control. The agreements provide that, upon a qualifying termination event, such officers will be entitled to (a) a severance payment equal to the officer's base salary plus target bonus amount; (b) continuation of health benefits for 12 months; and (c) immediate vesting of any remaining unvested equity awards, unless otherwise specified in the equity award agreements. In March 2012, the Company amended the agreements with its named executive officers to eliminate tax gross-up payments.

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16. UNAUDITED SELECTED QUARTERLY FINANCIAL DATA

The following table presents the Company's unaudited selected quarterly financial data for 2013 and 2012 (in thousands, except for share data):

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
For the fiscal year 2013:				
Total revenues	$63,259	$68,069	$70,946	$74,575
Gross profit	46,130	51,149	53,684	55,977
Operating income (loss)	7,092	8,836	9,476	(1,516)
Net income	5,700	5,106	5,273	582
Earnings per share:				
Basic (1)	$0.11	$0.10	$0.10	$0.01
Diluted (1)	$0.11	$0.09	$0.10	$0.01
For the fiscal year 2012:				
Total revenues	$50,359	$53,513	$55,845	$58,630
Gross profit	35,744	37,738	39,946	42,257
Operating income	6,116	5,688	6,839	9,250
Net income	3,770	3,604	4,053	6,593
Earnings per share:				
Basic (1)	$0.08	$0.07	$0.08	$0.13
Diluted (1)	$0.07	$0.07	$0.08	$0.13

(1) Prior period results have been adjusted to reflect the two-for-one stock split which was effected in the form of a stock dividend in December 2013.

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Schedule II—Valuation and Qualifying Accounts

The allowance for doubtful accounts as of December 31, 2013 and 2012 was $1.1 million and $0.7 million, respectively. The table below details the activity in the account for the three years ended December 31, 2013 (in thousands):

	2013	2012	2011
Balance at beginning of period	$747	$882	$308
Charged to costs and expenses	657	165	410
Charged to other accounts	—	239	225
Deductions	(349)	(539)	(61)
Balance at end of period	$1,055	$747	$882