Proto Labs Inc
Form 10-K
February 22, 2017

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

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FORM 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2016
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: 001-35435

Proto Labs, Inc.

(Exact name of Registrant as specified in its charter)

Minnesota	**41-1939628**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

5540 Pioneer Creek Drive

Maple Plain, Minnesota **55359**
(Address of principal executive offices) (Zip Code)

(763) 479-3680

(Registrant's telephone number, including area code)

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

Title of Each Class	**Name of Each Exchange on Which Registered**
Common Stock, Par Value $0.001 Per Share	New York Stock Exchange

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

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

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

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

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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

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

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

As of June 30, 2016 (the last business day of the Registrant’s most recently completed second fiscal quarter), the aggregate market value of voting stock held by non-affiliates of the Registrant was approximately $1.4 billion.

As of February 16, 2017, there were 26,527,770 shares of the Registrant’s common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant’s Proxy Statement for its 2017 Annual Meeting of Shareholders are incorporated by reference to Part III of this Annual Report on Form 10-K.

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Special Note Regarding Forward Looking Statements

Statements contained in this Annual Report on Form 10-K regarding matters that are not historical or current facts are "forward-looking statements" within the meaning of The Private Securities Litigation Reform Act of 1995. In some cases, you can identify forward-looking statements by the following words: "may," "will," "could," "would," "should," "expec "intend," "plan," "anticipate," "believe," "estimate," "predict," "project," "potential," "continue," "ongoing" or the negative of or other comparable terminology, although not all forward-looking statements contain these words. These statements involve known and unknown risks, uncertainties and other factors which may cause our results to be materially different than those expressed or implied in such statements. In particular, some of the risks associated with our business include:

- the level of competition in our industry and our ability to compete;
- our ability to respond to changes in our industry;
- our ability to effectively grow our business and manage our growth;
- our ability to continue to sell to existing and new customers;
- our ability to meet product developers' and engineers' needs and expectations regarding quick turnaround time, price and specifications for quality;
- the adoption rate of e-commerce and 3D CAD software by product developers and engineers;
- our ability to process a large volume of designs and identify significant opportunities in our business;
- our ability to maintain and enhance our brand;
- our ability to successfully identify, complete and integrate acquisitions or other strategic transactions;
- the loss of key personnel or failure to attract and retain additional personnel;
- system interruptions at our operating facilities;
- possible unauthorized access to customers' confidential information stored in our systems; and
- our ability to protect our intellectual property and not infringe on others' intellectual property.

Certain of these factors and others are described in the discussion on risk factors that appear in Part I, Item 1A. "Risk Factors" of this Annual Report on Form 10-K and uncertainties are detailed in this and other reports and filings with the Securities and Exchange Commission (SEC). Other unknown or unpredictable factors also could have

material adverse effects on our future results. We cannot guarantee future results, levels of activity, performance or achievements. Accordingly, you should not place undue reliance on these forward-looking statements. Finally, we expressly disclaim any intent or obligation to update any forward-looking statements to reflect subsequent events or circumstances.

PART I

Item 1. Business

Overview

Proto Labs, Inc. was incorporated in Minnesota in 1999. The terms “Proto Labs,” the “Company,” “we,” “us,” and “our” as use herein refer to the business and operations of Proto Labs, Inc. and its subsidiaries. We are an e-commerce driven digital manufacturer of quick-turn, on-demand custom parts for prototyping and short-run production. We manufacture parts for product developers and engineers worldwide, who are under increasing pressure to bring their finished products to market faster than their competition. We utilize injection molding, computer numerical control (CNC) machining and 3D printing to manufacture custom parts for our customers. Our proprietary technology eliminates most of the time-consuming and expensive skilled labor conventionally required to quote and manufacture parts. Our customers conduct nearly all of their business with us over the Internet. We target our products to the millions of product developers and engineers who use three-dimensional computer-aided design (3D CAD) software to design products across a diverse range of end-markets. We have established our operations in the United States, Europe and Japan, which we believe are three of the largest geographic markets where these product developers and engineers are located. Additional information required by this item is incorporated herein by reference to Note 17 – Segment Reporting of the Notes to our consolidated financial statements, which appears in Part II, Item 8. of this Annual Report on Form 10-K. We believe our use of advanced technology enables us to offer significant advantages at competitive prices to many product developers and engineers and is the primary reason we have become a leading supplier of custom parts.

We believe custom parts manufacturing has historically been an underserved market due to the inefficiencies inherent in the quotation, equipment set-up and non-recurring engineering processes required to produce custom parts. Our customers typically order short run custom parts for a variety of reasons, including:

- they need a prototype to confirm the form, fit and function of one or more components of a product under development;
- they need an initial supply of parts to support pilot production for testing of a product;
- they need an initial supply of parts to support production while their high-volume production mold is being prepared;
- they need on-demand manufacturing due to disruptions in their manufacturing process;
- their product will only be released in a limited quantity; or
- they need end-of-life production support.

In each of these instances, we believe our solution provides product developers and engineers with an exceptional combination of speed, quality, competitive pricing, ease of use and reliability that they typically cannot find among

conventional custom parts manufacturers. Our technology enables us to ship parts as soon as the same day after receipt of a customer's design submission.

Our manufacturing product lines currently include Injection Molding, CNC Machining and 3D Printing. We continually seek to expand the range of size and geometric complexity of the parts we can make with these processes, to extend the variety of materials we are able to support and to identify additional manufacturing processes to which we can apply our technology in order to better serve the evolving preferences and needs of product developers and engineers.

We have experienced significant growth since our inception in 1999. We have grown our total revenue from $126.0 million in 2012 to $298.1 million in 2016. We have grown our income from operations from $34.9 million in 2012 to $61.8 million in 2016.

Our increases in revenue and income from operations can be attributed to serving more product development engineers and our expansion of product lines offered. We were founded in 1999 with plastic injection molding, and have expanded our product lines over the years by the introduction of:

- CNC machining in 2007;
- liquid silicon rubber (LSR) that expanded the breadth and scope of our injection molding product line in 2014;
- 3D printing, including stereolithography (SL), selective laser sintering (SLS), and direct metal laser sintering (DMLS), through our acquisition of FineLine Prototyping, Inc. (FineLine) in 2014 and expanded through our acquisition of certain assets, including shares of select subsidiaries, of Alphaform AG (Alphaform) in 2015;
- lathe-turned parts that expanded the breadth and scope of our CNC product line in 2015; and
- rapid overmolding technology which expanded the breadth of our manufacturing capabilities in our Injection Molding product line in 2016.

Industry Overview

Our Industry

We serve product developers and engineers worldwide who bring new ideas to market in the form of products containing one or more custom parts. Many of these product developers and engineers use 3D CAD software to create digital models representing their custom part designs that are then used to create physical parts for concept modeling, prototyping, functional testing, market evaluation or production. Custom prototype parts play a critical role in the product development process, as they provide product developers and engineers with the ability to test and confirm their intended performance requirements and explore design alternatives.

Early in the product development process, 3D printing processes such as stereolithography (SL) can be used to quickly produce an approximate physical representation of a part, but these representations may not meet product developers' and engineers' requirements for dimensional accuracy, cosmetics or material properties. As an alternative, 3D printing processes such as selective laser sintering (SLS) and direct metal laser sintering (DMLS) or CNC machining can be used to produce low volumes of high-quality custom parts in either metal or plastic. For follow-on functional testing, market evaluation and production runs, parts are typically manufactured using injection molding.

Our Solution

We have developed proprietary software and advanced manufacturing processes that automate much of the skilled labor conventionally required in quoting, production engineering and manufacturing of custom parts. We believe our interactive web-based interface and highly automated processes address the desires of many product developers and engineers for a fast, efficient and cost-effective means to obtain custom parts and are the primary reasons we have become a leading supplier of custom parts.

Key elements of our solution include:

Sophisticated Technology that Reduces Turnaround Time

Our digital model is centered on our web-based interface and proprietary software to automate many of the manual and time-consuming processes typically required to obtain custom injection-molded, CNC-machined or 3D-printed

parts from conventional suppliers. Our platform automates many aspects of the entire process from design submission through manufacturability analysis and feedback, quotation, order submission, mold design, tool path generation and mold or part manufacture. To utilize our platform, a prospective customer uploads a 3D CAD file of their required part through our website. Often within minutes of design submission, our software analyzes the manufacturability of the part, assesses our ability to make the part, and returns a firm price quotation with any recommendations for design modifications. In the case of CNC machining, this manufacturability analysis identifies features that may be too fragile to be machined and areas that cannot be machined at all. For injection molding, problematic features such as undercuts, thin areas, thick areas and areas requiring geometry adjustments to allow the part to be ejected from the mold are identified. Many of our customers find this analysis particularly helpful, as it diagnoses and prevents potential problems prior to manufacturing. We can also provide a flow analysis to identify parts that may be so thin and large that plastic will solidify before the mold can be completely filled.

Our quoting system is highly interactive, enabling our prospective customers to change the material, finish, quantity or shipping schedule of orders, and to instantly receive an updated quotation. Once an order is received, our software automates much of the manual engineering and skilled labor that is normally required to manufacture parts. As a result, in many cases we are able to quote orders in minutes and ship parts as soon as the same day ordered.

Scale to Process Large Numbers of Unique Part Designs

Our proprietary, highly scalable quoting technology addresses the manual processes conventionally involved in submitting a design, analyzing its manufacturability, making design revision recommendations and generating price quotations. This enables us to quickly analyze high volumes of 3D CAD part design submissions and provide feedback to our prospective product developer and engineer customers. In 2016 alone, we generated quotations for over 650,000 design submissions. Our proprietary manufacturing automation technology is also highly scalable, enabling us to process large numbers of unique designs and, combined with our manufacturing processes, efficiently and effectively manufacture high volumes of parts to meet the needs of product developers and engineers.

Enhanced Customer Experience

Our web-based customer interface provides a straightforward means of submitting 3D CAD part designs. Our proprietary manufacturability analysis then quickly analyzes whether a part design falls within our manufacturing capabilities. In many cases, our software provides suggested design modifications to enhance manufacturability, which is presented to the product developer or engineer in an interactive quotation containing a color-coded 3D representation of the part. This allows product developers and engineers to quickly determine the manufacturability of their parts, understand the cost and when they can be shipped. Our interactive quotations provide instant visibility into the impact of changing an order's various parameters such as material, finish, quantity or shipping schedule. As a result, we provide product developers and engineers with an easy-to-use and consistent means to obtain custom parts.

Attractive Custom Pricing

Based on internal market research, we believe we generally have competitive pricing on custom orders. We believe this is a direct result of our technology and the efficiency of our operations, both of which were designed specifically for custom parts production. By limiting these costs, we can typically offer attractive pricing not normally possible in the custom parts market, and as a result, we can typically offer product developers and engineers competitive prices on custom manufactured parts.

Monitoring and Control

We have developed a proprietary, intranet-based monitoring and control system that allows us to monitor key aspects of our entire worldwide operations in real time using an easy-to-understand management dashboard. This system provides us with the ability to quickly react to new information across our organization.

Our Product Lines

Our Injection Molding, CNC Machining and 3D Printing product lines offer many product developers and engineers the ability to quickly and efficiently outsource their quick-turn custom parts manufacturing. See Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations” for the historical revenue generated by each of Injection Molding, CNC Machining and 3D Printing.

Injection Molding

Our Injection Molding product line uses our 3D CAD-to-CNC machining technology for the automated design and manufacture of thermoplastic, metal or liquid silicone injection molds, which are then used to produce custom injection-molded parts on commercially available equipment. Our Injection Molding product line is used for prototype, on-demand and short-run production. Prototype quantities typically range from 25 to 100 parts. Because we retain possession of the molds, customers who need short-run production often come back to Proto Labs’ Injection Molding product line for additional quantities typically ranging up to 10,000 parts or more. They do so to support pilot production for product testing or while their tooling for high-volume production is being prepared, because they need on-demand manufacturing due to disruptions in their manufacturing process, because their product will only be released in a limited quantity or because they need end-of-life production support. These additional part orders typically occur on approximately half of the molds that we make, typically accounting for approximately half of our total Injection Molding revenue.

CNC Machining

Our CNC Machining product line uses commercially available CNC machines to cut plastic or metal blocks into one or more custom parts based on the 3D CAD model uploaded by the product developer or engineer. Our efficiencies derive from the automation of the programming of these machines and a proprietary fixturing process. The CNC Machining product line is well suited to produce small quantities, typically in the range of one to 200 parts.

3D Printing

Our 3D Printing product line includes stereolithography (SL), selective laser sintering (SLS) and direct metal laser sintering (DMLS) processes, which offers customers a wide-variety of high-quality, precision rapid prototyping and low volume production. These processes create parts with a high level of accuracy, detail, strength and durability. 3D Printing is well suited to produce small quantities, typically in the range of one to 50 parts.

Our Process

The process for Injection Molding, CNC Machining and 3D Printing begins when the product developer or engineer uploads one or more 3D CAD models representing the desired part geometry through our website. Our proprietary software uses complex algorithms to analyze the 3D CAD geometry, analyze its manufacturability and support the creation of an interactive, web-based quotation containing pricing and manufacturability information. A link to the quotation is then e-mailed to the product developer or engineer, who can access the quotation, change a variety of order parameters and instantly see the effect on price before finalizing the order. For 3D Printing, the quote is reviewed and then scheduled for production. For CNC Machining, the tool paths are then reviewed and routed to our high-speed CNC machining centers for execution. In the case of Injection Molding, our proprietary software supports the creation of the mold design and the tool paths required to manufacture the mold components, which are then routed to our CNC machining centers for execution. Once the mold is assembled, it is placed in one of our injection molding presses to create the required parts. For our CNC Machining product line, we ship parts as soon as the same day as the order is received. For our Injection Molding and 3D Printing product lines, we ship parts in as little as one business day from design submission. We ship our parts via small parcel common carriers on standard terms and conditions.

Our Growth Strategy

The principal elements of our growth strategy are to:

Expand the Customer Base

We plan to expand our customer base to serve more product developers and engineers within the companies that have already used our product lines. Individual product developers and engineers typically make or influence the choice of vendor when sourcing custom parts. We believe a significant opportunity exists for us to leverage highly satisfied product developers and engineers to encourage others within the same organization to utilize our product lines. We

have historically generated a significant number of new customers through word-of-mouth referrals from other product developers and engineers, and combine these referrals with the efforts of our marketing and sales force to identify and market our product lines to the colleagues of our existing customers.

We also plan to use our marketing and sales capabilities to continue to pursue product developers and engineers within companies who have not yet used our products. Our presence in geographic regions that have high populations of 3D CAD users provides us with a broad universe of potential new customer companies on which to focus our marketing and sales efforts.

We believe there may be opportunities to grow by identifying and expanding into select additional geographic markets. We currently operate in the United States, Europe and Japan, where we believe a substantial portion of the world's product developers and engineers are located. We entered the European market in 2005 and launched operations in Japan in 2009. For 2016, revenue earned in these markets represents approximately 25% of our total revenue. In 2016, we increased marketing efforts in Europe and the surrounding regions. While we currently do not have specific plans to expand into any particular geographic markets, we believe opportunities exist to serve the needs of product developers and engineers in select new geographic regions and we will continue to evaluate such opportunities if and when they arise.

We plan to further enhance the functionality and ease of use of our platform and expand the capabilities of our technology in order to further increase automation and meet the evolving needs of product developers and engineers worldwide. We believe product developers and engineers have come to expect advanced web-based tools and a fully integrated Internet platform from their vendors. We will continue to use the Internet to provide product developers and engineers with a standardized interface through which they can upload their 3D CAD models and obtain firm, interactive quotations quickly and efficiently.

Add Manufacturing Processes

We seek to identify additional manufacturing processes to which we can apply our digital technology and expertise to meet a greater range of product developers' and engineers' needs. Introducing new manufacturing processes can both attract new customers and provide us with a significant opportunity to cross-sell our existing product lines to our existing customer base. We regularly evaluate new manufacturing processes to offer product developers and engineers and introduce such new processes when we are confident that a sufficient market demand exists and that we can offer the same advantages our customers have come to expect from us. See Item 6. "Selected Financial Data" for disclosure of our historical research and development expenses.

Examples of new manufacturing processes we have added include CNC Machining, 3D Printing through the acquisitions of FineLine and Alphaform and the launch of liquid silicone rubber injection molding, lathe-turned parts and rapid overmolding technology. Our CNC Machining product line was first introduced in the United States in 2007 and represents 27.3% of our total revenue in the year ended December 31, 2016. In April 2014, we added 3D-printing technologies through our acquisition of FineLine and further expanded our 3D printing capabilities in October 2015 through our acquisition of Alphaform. Our 3D Printing product line represents 12.7% of our total revenue in the year ended December 31, 2016. During 2014, we introduced liquid silicone rubber injection molding and in February 2015, we introduced lathe-turned products to further expand our product offerings. In 2016, we expanded the breadth of our manufacturing capabilities by adding rapid overmolding technology to our Injection Molding product line. Our Injection Molding product line represents 59.0% of our total revenue in the year ended December 31, 2016.

Broaden the Parts Envelope

We regularly analyze the universe of customer design submissions that we are currently unable to manufacture and focus a portion of our research and development efforts to expand the range of parts that we can produce. Since we first introduced our Injection Molding product line in 1999, we have steadily expanded the size and geometric complexity of the injection-molded parts we are able to manufacture, and we continue to extend the diversity of materials we are able to support. Similarly, since first introducing our CNC Machining product line in 2007, we have expanded the range of part sizes, design geometries and materials we can support. As we continue to expand the range of our existing process capabilities, we believe we will meet the needs of a broader set of product developers and engineers and consequently convert a higher number of quotation requests into orders.

Marketing

Our international marketing effort generates prospects for our sales teams and seeks to strengthen our reputation as an industry leader in digital manufacturing services for custom prototyping and low-volume manufacturing. Since we are

an agile, technology-based company, much of our marketing activities occur online. We use marketing automation software to enhance the productivity of our marketing and sales teams and continuously track the results of every campaign to ensure our return on investment.

We maintain top-of-mind brand awareness with product developers and engineers through regular publication of technical information including design guidelines and helpful tips, engineering white papers, educational webinars, quick videos, and a quarterly journal focused on important industry topics. We also provide complimentary physical design aids to designers and engineers — as well as teachers and students — that highlight technical aspects of injection molding to help create efficient, well-designed parts. We believe these educational materials are key aspects of our lead generation efforts.

Marketing represents the face of Proto Labs, so it is our goal to actively and intelligently engage designers and engineers across multiple mediums — whether print, online, social media or in person. By doing this, we gain new customers, drive sales and build brand equity.

Sales and Customer Service

We maintain an internal sales team trained in the basics of part design and the capabilities of our manufacturing product lines, as well as the key advantages of our product lines over alternate methods of custom parts manufacturing. We organize our sales team into complementary roles: business development, account management and strategic account management, with the former focused on selling to new customer companies and the latter two focused on expanding sales within existing customer companies. We believe our sales staff is adept at researching customer companies and networking to find additional product developers and engineers who may have a need for our products. We also have a team of customer service engineers who can support highly technical engineering discussions with product developers and engineers as required during the sales process. Our revenue is generated from a diverse customer base, with no single customer company representing more than 2% of our total revenue in 2016.

Competition

The market for custom parts manufacturing is fragmented, highly competitive and subject to rapid and significant technological change. Our potential competitors include:

- *Captive in-house product manufacturing*. Many larger companies undertaking product development have established additive rapid prototyping, CNC machining or injection molding capabilities internally to support prototyping or manufacturing requirements of their product developers and engineers.

- *Other custom parts manufacturers.* There are thousands of alternative manufacturing machine shops, injection molding suppliers, 3D printing service bureaus and vendors worldwide. The size and scale of these businesses range from very small specialty shops to large, high-volume production manufacturers.

We believe that the key competitive factors in our industry include:

- Quality: dimensional accuracy, surface finish, material properties, color and cleanliness;

- Speed: turnaround time for quotations and parts;

- Reliability: greater than 97% on-time delivery;

- Service: overall customer experience, from web interface to post-sales support;

- Capability: range of part sizes and dimensional complexities supported, variety of manufacturing processes offered, materials supported and post-processing provided;

- Scale: ability to support thousands of part designs in parallel;

- Capacity: ability to manage peaks in demand with very short lead times and no minimum order quantities; and

- Price: mold and part pricing.

We believe that we have competitive strengths that position us favorably and have enabled us to become a leader in our markets. We also believe that substantially all of our current direct competitors are relatively small in terms of size of operations, revenue, number of customers and volume of parts sold, and generally lack our technological capabilities. However, our industry is evolving rapidly and other companies, including potentially larger and more established companies with developed technological capabilities, may begin to focus on custom parts manufacturing. These companies could more directly compete with us, along with our existing competitors, and could also launch new products and product lines that we do not offer that may quickly gain market acceptance. Any of the foregoing could adversely affect our ability to attract customers.

Intellectual Property

We regard our patents, trademarks, service marks, trade dress, trade secrets, copyrights, domain names and other intellectual property as valuable to our business and rely on patent, trademark and copyright law, trade secret protection and confidentiality and/or license agreements with our employees, customers, vendors and others to protect our proprietary rights. We register our patents, trademarks and service marks in the United States and other jurisdictions as we deem appropriate. As of December 31, 2016, we owned and had applications pending for patents relating to various aspects of our quoting and manufacturing processes as follows:

Jurisdiction	Issued Patents	Applications Pending
United States	16	1
United Kindgom	2	0
Germany	0	2

Our patents have expiration dates ranging from 2022 to 2032. We also owned approximately 12 registered and 1 pending United States trademarks or service marks as of December 31, 2016, with corresponding registered protection in Europe and Japan for the most important of these marks such as PROTO LABS, PROTOMOLD, FIRSTCUT, PROTOQUOTE, FIRSTQUOTE, PROTOFLOW and FINELINE, corresponding approved protection in Canada for PROTO LABS, FIRSTCUT and FINELINE, and corresponding registered protection in Australia, Canada and Mexico for PROTOMOLD. There can be no assurance that the steps we take to protect our proprietary rights will be adequate or that third parties will not infringe or misappropriate such rights. We have been subject to claims and expect to be subject to legal proceedings and claims from time to time in the ordinary course of our business. In particular, we may face claims from third parties that we have infringed their patents, trademarks or other intellectual property rights. Such claims, even if not meritorious, could result in the expenditure of significant financial and managerial resources. Any unauthorized disclosure or use of our intellectual property could make it more expensive to do business and harm our operating results.

Employees

As of December 31, 2016, we had 1,700 full-time employees. We consider our current relationship with our employees to be good. We also regularly use independent contractors and other temporary employees across the organization to augment our regular staff. We believe that our future success will depend in part on our continued ability to attract, hire and retain qualified personnel.

Available Information

Our principal executive offices are located at 5540 Pioneer Creek Drive, Maple Plain, Minnesota 55359 and our telephone number is (763) 479-3680. Our website address is www.protolabs.com. Information on our website does not constitute part of this Annual Report on Form 10-K or any other report we file or furnish with the SEC. We provide free access to various reports that we file with or furnish to the SEC through our website as soon as reasonably practicable after they have been filed or furnished. These reports include, but are not limited to, our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and any amendments to these reports. Our SEC reports can be accessed through the investor relations section of our website.

The public may read and copy any materials that we file with the SEC at the SEC’s Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains a website that contains reports, proxy and information statements, and other information regarding issuers that file information electronically with the SEC. The SEC’s website is www.sec.gov.

Executive Officers of the Registrant

Set forth below are the names of our current executive officers, their ages, titles, the year first appointed as an executive officer, and employment for the past five years:

Victoria M. Holt	59	President, Chief Executive Officer and Director
Robert Bodor	44	Vice President/General Manager – Americas
John A. Way	44	Chief Financial Officer and Executive Vice President of Development
Arthur R. Baker III	49	Chief Technology Officer
David M. Fein	48	Chief Revenue Officer
John B. Tumelty	46	Vice President/General Manager and Managing Director – Europe, Middle East and Africa

Executive officers of the Company are elected at the discretion of the board of directors with no fixed terms. There are no family relationships between or among any of the executive officers or directors of the Company.

Victoria M. Holt. Ms. Holt has been our President and Chief Executive Officer since February 2014. Prior to joining Proto Labs, Ms. Holt served as President and Chief Executive Officer of Spartech Corporation, a leading producer of plastic sheet, compounds and packaging products, from September 2010 until Spartech was purchased by PolyOne Corporation in March 2013. Ms. Holt also is a member of the Board of Directors of Waste Management, Inc.

Robert Bodor. Dr. Bodor has served as our Vice President/General Manager - Americas since January 2015. From July 2013 to January 2015, Dr. Bodor served as our Chief Technology Officer. From December 2012 to June 2013, Dr. Bodor served as our Director of Business Development. Prior to joining Proto Labs, from January 2011 to December 2012, Dr. Bodor held several roles at Honeywell, most recently leading SaaS business offerings for Honeywell's Life Safety Division.

John A. Way. Mr. Way has served as our Chief Financial Officer and Executive Vice President of Development since December 2014. From October 2013 to September 2014, Mr. Way served as Chief Financial Officer of Univita Health Inc., a privately held home healthcare service provider. From September 2012 to July 2013, Mr. Way served as Chief Financial Officer of Virtual Radiologic, a global telemedicine company. From October 2002 to November 2012, Mr. Way worked in senior financial positions at several divisions within UnitedHealth Group, including Chief Financial Officer of Optum Collaborative Care, SecureHorizons and OptumHealth.

Arthur R. Baker III. Dr. Baker has been our Chief Technology Officer since May 2016. Prior to joining Proto Labs, Dr. Baker served as Chief Technology Officer of PaR Systems, a robotics and specialty machine tool builder. From 2005 to 2014, Dr. Baker held multiple positions at MTS Systems, including General Manager of the Test Division, Chief Technology Officer, and Vice President of Engineering and Operations. MTS Systems was a leader in mechanical testing and simulation systems for automotive, aerospace, medical, civil-seismic and general research.

David M. Fein. Mr. Fein has been our Chief Revenue Officer since December 2016. Prior to joining Proto Labs, Mr. Fein spent 16 years at PMC-Sierra, Inc., a semiconductor and software solutions provider for big data storage, optical transport networks and wireless infrastructure markets. Most recently, Mr. Fein served as Executive Vice President, Worldwide Sales from December 2014 until PMC-Sierra, Inc. was acquired by Microsemi Corporation in January 2016. From November 2008 to November 2014, Mr. Fein served as Vice President, Sales for the Americas at PMC-Sierra.

John B. Tumelty. Mr. Tumelty has served as the Vice President/General Manager and Managing Director – Europe, Middle East and Africa since January 2015. Mr. Tumelty served as the Managing Director of Proto Labs, Limited from its inception in July 2005 to January 2015. Mr. Tumelty leads our company's operations in Europe.

Item 1A. Risk Factors

The following are the significant factors that could materially adversely affect our business, financial condition, or operating results, as well as adversely affect the value of an investment in our common stock.

Risks Relating to Our Business

We face significant competition and expect to face increasing competition in many aspects of our business, which could cause our operating results to suffer.

The market for custom parts manufacturing is fragmented and highly competitive. We compete for customers with a wide variety of custom parts manufacturers and methods. Some of our current and potential competitors include captive in-house product lines, other custom parts manufacturers and alternative manufacturing vendors such as those utilizing 3D printing processes including stereolithography (SL), selective laser sintering (SLS) and direct metal laser sintering (DMLS). Moreover, some of our existing and potential competitors are researching, designing, developing and marketing other types of products and product lines. We also expect that future competition may arise from the development of allied or related techniques for custom parts manufacturing that are not encompassed by our patents, from the issuance of patents to other companies that may inhibit our ability to develop certain products and from improvements to existing technologies. Furthermore, our competitors may attempt to adopt and improve upon key aspects of our business model, such as development of technology that automates much of the manual labor conventionally required to quote and manufacture custom parts, implementation of interactive web-based and automated user interface and quoting systems and/or building scalable operating models specifically designed for efficient custom production. Third-party CAD software companies may develop software that mold-makers, injection molders and CNC machine shops could use to compete with our business model. Additive manufacturers may develop stronger, higher temperature resins or introduce other improvements that could more effectively compete with us on part quality. We may also, from time to time, establish alliances or relationships with other competitors or potential competitors. To the extent companies terminate such relationships and establish alliances and relationships with our competitors, our business could be harmed.

Existing and potential competitors may have substantially greater financial, technical, marketing and sales, manufacturing, distribution and other resources and name recognition than us, as well as experience and expertise in intellectual property rights and operating within certain international locations, any of which may enable them to compete effectively against us.

Though we plan to continue to expend resources to develop new technologies, processes and product lines, we cannot assure you that we will be able to maintain our current position or continue to compete successfully against current and future sources of competition. Our challenge in developing new products is finding product lines for which our automated quotation and manufacturing processes offer an attractive value proposition, and we may not be able to find any new product lines with potential economies of scale similar to our molding and machining product lines. If we do not keep pace with technological change and introduce new technologies, processes and product lines, the demand for our products and product lines may decline and our operating results may suffer.

Our success depends on our ability to deliver products and product lines that meet the needs of product developers and engineers and to effectively respond to changes in our industry.

We derive almost all of our revenue from the manufacture and sale to product developers and engineers of quick-turn low volumes of custom parts for prototyping, support of internal manufacturing and limited quantity product release. Our business has been, and, we believe, will continue to be, affected by changes in product developer and engineering requirements and preferences, rapid technological change, new product and product line introductions and the emergence of new standards and practices, any of which could render our technology, products and product lines less attractive, uneconomical or obsolete. To the extent that our customers' need for quick-turn parts decreases significantly for any reason, it would likely have a material adverse effect on our business and operating results and harm our competitive position. In addition, CAD simulation and other technologies may reduce the demand for physical prototype parts. Therefore, we believe that to remain competitive, we must continually expend resources to enhance and improve our technology, product offerings and product lines.

In particular, we plan to increase our research and development efforts and to continue to focus a significant portion of those efforts to further develop our technology in areas such as our interactive user interface and manufacturing processes, potentially introduce new manufacturing processes within the research and development initiative we refer to as Protoworks, and broaden the range of parts that we are able to manufacture. We believe successful execution of this part of our business plan is critical for our ability to compete in our industry and grow our business, and there are no guarantees we will be able to do so in a timely fashion, or at all. Broadening the range of parts we offer is of particular importance since limitations in manufacturability are the primary reason we are not able to fulfill many quotation requests. There are no guarantees that the resources devoted to executing on this aspect of our business plan will improve our business and operating results or result in increased demand for our products and product lines. Failures in this area could adversely impact our operating results and harm our reputation and brand. Even if we are successful in executing in these areas, our industry is subject to rapid and significant technological change, and our competitors may develop new technologies, processes and product lines that are superior to ours. Our research and development costs were approximately $22.4 million, $18.4 million and $16.6 million for the years ended December

31, 2016, 2015 and 2014, respectively, and there is no guarantee that these costs will enable us to maintain or grow our revenue profitability. Refer to Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in this Annual Report on Form 10-K for additional discussion related to research and development costs.

Any failure to properly meet the needs of product developers and engineers or respond to changes in our industry on a cost-effective and timely basis, or at all, would likely have a material adverse effect on our business and operating results and harm our competitive position.

Our failure to meet our product developers’ and engineers’ expectations regarding quick turnaround time would adversely affect our business and results of operations.

We believe many product developers and engineers are facing increased pressure from global competitors to be first to market with their finished products, often resulting in a need for quick turnaround of custom parts. We believe our ability to quickly quote, manufacture and ship custom parts has been an important factor in our results to date. There are no guarantees we will be able to meet product developers’ and engineers’ increasing expectations regarding quick turnaround time, especially as we increase the scope of our operations. If we fail to meet our customers’ expectations regarding turnaround time in any given period, our business and results of operations will likely suffer.

Our failure to meet our product developers' and engineers' price expectations would adversely affect our business and results of operations.

Demand for our product lines is sensitive to price. We believe our competitive pricing has been an important factor in our results to date. Therefore, changes in our pricing strategies can have a significant impact on our business and ability to generate revenue. Many factors, including our production and personnel costs and our competitors' pricing and marketing strategies, can significantly impact our pricing strategies. If we fail to meet our customers' price expectations in any given period, demand for our products and product lines could be negatively impacted and our business and results of operations could suffer.

Our failure to meet our product developers' and engineers' quality specifications would adversely affect our business and results of operations.

We believe many product developers and engineers have a need for specific quality of quick-turn, on-demand custom parts. We believe our ability to create parts with the specifications of the product developers and engineers is an important factor in our results to date. If we fail to meet our customers' specifications in any given period, demand for our products and product lines could be negatively impacted and our business and results of operations could suffer.

The strength of our brand is important to our business, and any failure to maintain and enhance our brand would hurt our ability to retain and expand our customer base as well as further penetrate existing customers.

Since our products and product lines are sold primarily through our websites, the success of our business depends upon our ability to attract new and repeat customers to our websites in order to increase business and grow our revenue. Customer awareness and the perceived value of our brand will depend largely on the success of our marketing efforts, as well as our ability to consistently provide quality custom parts within the required timeframes and positive customer experiences, which we may not do successfully. A primary component of our business strategy is the continued promotion and strengthening of our brand, and we have incurred and plan to continue to incur substantial expense related to advertising and other marketing efforts directed toward enhancing our brand. We have initiated marketing efforts through social media, but this method of marketing may not be successful and subjects us to a greater risk of inconsistent messaging and bad publicity. We may choose to increase our branding expense materially, but we cannot be sure that this investment will be profitable. If we are unable to successfully maintain and enhance our brand, this could have a negative impact on our business and ability to generate revenue.

Our business depends in part on our ability to process a large volume of new part designs from a diverse group of product developers and engineers and successfully identify significant opportunities for our business based on those submissions.

We believe the volume of new part designs we process and the size and diversity of our customer base give us valuable insight into the needs of our prospective customers. We utilize this industry knowledge to determine where we should focus our development resources. If the number of new part designs we process or the size and diversity of our customer base decrease, our ability to successfully identify significant opportunities for our business and meet the needs of product developers and engineers could be negatively impacted. In addition, even if we do continue to process a large number of new part designs and work with a significant and diverse customer base, there are no guarantees that any industry knowledge we extract from those interactions will be successfully utilized to help us identify significant business opportunities or better understand the needs of product developers and engineers.

The loss of one or more key members of our management team or personnel, or our failure to attract, integrate and retain additional personnel in the future, could harm our business and negatively affect our ability to successfully grow our business.

We are highly dependent upon the continued service and performance of the key members of our management team and other personnel. The loss of any of these individuals, each of whom is "at will" and may terminate his or her employment relationship with us at any time, could disrupt our operations and significantly delay or prevent the achievement of our business objectives. We believe that our future success will also depend in part on our continued ability to identify, hire, train and motivate qualified personnel. A possible shortage of qualified individuals in the regions where we operate might require us to pay increased compensation to attract and retain key employees, thereby increasing our costs. In addition, we face intense competition for qualified individuals from numerous companies, many of whom have substantially greater financial and other resources and name recognition than us. We may be unable to attract and retain suitably qualified individuals who are capable of meeting our growing operational, managerial and other requirements, or we may be required to pay increased compensation in order to do so. Our failure to attract, hire, integrate and retain qualified personnel could impair our ability to achieve our business objectives.

If we fail to grow our business as anticipated, our net sales, gross margin and operating margin will be adversely affected.

We are attempting to grow our business substantially. To this end, we have made and expect to continue to make significant investments in our business, including investments in our infrastructure, technology, and marketing and sales efforts. These investments include dedicated facilities expansion and increased staffing, both domestic and international. If our business does not generate the level of revenue required to support our investment, our net sales and profitability will be adversely affected.

If we are unable to manage our growth and expand our operations successfully, our reputation and brand may be damaged, and our business and results of operations may be harmed.

Over the past several years, we have experienced rapid growth. For example, we have grown from 749 full-time employees as of January 1, 2013 to 1,700 full-time employees as of December 31, 2016. We have expanded internationally, including establishing manufacturing operations in Europe in 2005 and Japan in 2009. In 2014, we expanded our product lines with 3D Printing through our acquisition of FineLine. In 2015, we expanded our manufacturing operations and our 3D Printing product lines in Europe through our acquisition of Alphaform. We expect this growth to continue and the number of countries and facilities from which we operate to increase in the future. Our ability to effectively manage our anticipated growth and expansion of our operations will require us to do, among other things, the following:

- enhance our operational, financial and management controls and infrastructure, human resource policies, and reporting systems and procedures, in particular as we continue to operate as a global organization;
- effectively scale our operations, including accurately predicting the need for floor space, equipment, and additional staffing;
- successfully identify, recruit, hire, train, maintain, motivate and integrate additional employees; and
- expand our international resources.

These enhancements and improvements will require significant capital expenditures and allocation of valuable management and employee resources. Furthermore, our growth, combined with the geographical dispersion of our operations, has placed, and will continue to place, a strain on our operational, financial and management infrastructure. Our future financial performance and our ability to execute on our business plan will depend, in part, on our ability to effectively manage any future growth and expansion. There are no guarantees we will be able to do so in

an efficient or timely manner, or at all. Our failure to effectively manage growth and expansion could have a material adverse effect on our business, results of operations, financial condition, prospects, and reputation and brand, including impairing our ability to perform to our customers' expectations.

We may not timely and effectively scale and adapt our existing technology, processes and infrastructure to meet the needs of our business.

A key element to our continued growth is the ability to quickly and efficiently quote an increasing number of product developer and engineer submissions across geographic regions and to manufacture the related parts. This will require us to timely and effectively scale and adapt our existing technology, processes and infrastructure to meet the needs of our business. With respect to our websites and quoting technology, it may become increasingly difficult to maintain and improve their performance, especially during periods of heavy usage and as our solutions become more complex and our user traffic increases across geographic regions. Similarly, our manufacturing automation technology may not enable us to process the large numbers of unique designs and efficiently manufacture the related parts in a timely fashion to meet the needs of product developers and engineers as our business continues to grow. Any failure in our ability to timely and effectively scale and adapt our existing technology, processes and infrastructure could negatively impact our ability to retain existing customers and attract new customers, damage our reputation and brand, result in lost revenue, and otherwise substantially harm our business and results of operations.

Numerous factors may cause us not to maintain the revenue growth that we have historically experienced.

Although our revenue has grown over the past five years from $126.0 million for the year ended December 31, 2012 to $298.1 million for the year ended December 31, 2016, we may not be able to maintain our historical rate of revenue growth. We believe that our continued revenue growth will depend on many factors, a number of which are out of our control, including among others, our ability to:

- retain and further penetrate existing customer companies, as well as attract new customer companies;
- consistently execute on custom part orders in a manner that satisfies product developers' and engineers' needs and provides them with a superior experience;
- develop new technologies or manufacturing processes and broaden the range of parts we offer;
- successfully execute on our international strategy and expand into new geographic markets;
- capitalize on product developer and engineer expectations for access to comprehensive, user-friendly e-commerce capabilities 24 hours per day, 7 days per week;
- increase the strength and awareness of our brand across geographic regions;
- respond to changes in product developer and engineer needs, technology and our industry; and
- react to challenges from existing and new competitors.

We cannot assure you that we will be successful in addressing the factors above and continuing to grow our business and revenue.

Our operating results and financial condition may fluctuate on a quarterly and annual basis.

Our operating results and financial condition may fluctuate from quarter to quarter and year to year, and are likely to continue to vary due to a number of factors, some of which are outside of our control. In addition, our actual or

projected operating results may fail to match our past performance. These events could in turn cause the market price of our common stock to fluctuate. If our operating results do not meet the expectations of securities analysts or investors, who may derive their expectations by extrapolating data from recent historical operating results, the market price of our common stock will likely decline.

Our operating results and financial condition may fluctuate due to a number of factors, including those listed below and those identified throughout this “Risk Factors” section:

- the development of new competitive systems or processes by others;
- the entry of new competitors into our market, whether by established companies or by new companies;
- changes in the size and complexity of our organization, including our international operations;
- levels of sales of our products and product lines to new and existing customers;
- the geographic distribution of our sales;
- changes in product developer and engineer preferences or needs;

- changes in the amount that we invest to develop, acquire or license new technologies and processes, which we anticipate will generally increase and may fluctuate in the future;

- delays between our expenditures to develop, acquire or license new technologies and processes, and the generation of sales related thereto;

- our ability to timely and effectively scale our business during periods of sequential quarterly or annual growth;

- limitations or delays in our ability to reduce our expenses during periods of declining sequential quarterly or annual revenue;

- changes in our pricing policies or those of our competitors, including our responses to price competition;

- changes in the amount we spend in our marketing and other efforts;

- unexpected increases in expenses as compared to our related accounting accruals or operating plan;

- the volatile global economy;

- general economic and industry conditions that affect customer demand and product development trends;

- interruptions to or other problems with our website and interactive user interface, information technology systems, manufacturing processes or other operations;

- changes in accounting rules and tax and other laws; and

- plant shutdowns due to a health pandemic or weather conditions.

Due to all of the foregoing factors and the other risks discussed in this "Risk Factors" section, you should not rely on quarter-to-quarter or year-to-year comparisons of our operating results as an indicator of future performance.

Interruptions to or other problems with our website and interactive user interface, information technology systems, manufacturing processes or other operations could damage our reputation and brand and substantially harm our business and results of operations.

The satisfactory performance, reliability, consistency, security and availability of our websites and interactive user interface, information technology systems, manufacturing processes and other operations are critical to our reputation and brand, and to our ability to effectively service product developers and engineers. Any interruptions or other problems that cause any of our websites, interactive user interface or information technology systems to malfunction or be unavailable, or negatively impact our manufacturing processes or other operations, may damage our reputation and brand, result in lost revenue, cause us to incur significant costs seeking to remedy the problem and otherwise substantially harm our business and results of operations.

A number of factors or events could cause such interruptions or problems, including among others: human and software errors, design faults, challenges associated with upgrades, changes or new facets of our business, power loss, telecommunication failures, fire, flood, extreme weather, political instability, acts of terrorism, war, break-ins and security breaches, contract disputes, labor strikes and other workforce-related issues, capacity constraints due to an unusually large number of product developers and engineers accessing our websites or ordering parts at the same time, and other similar events. These risks are augmented by the fact that our customers come to us largely for our quick-turn manufacturing capabilities and that accessibility and turnaround speed are often of critical importance to these product developers and engineers. We are dependent upon our facilities through which we satisfy all of our production demands and in which we house all of the computer hardware necessary to operate our websites and systems as well as managerial, customer service, sales, marketing and other similar functions, and we have not identified alternatives to these facilities or established fully redundant systems in multiple locations. However, we have back-up computing systems for each of our United States, European and Japanese operations. In addition, we are dependent in part on third parties for the implementation and maintenance of certain aspects of our communications and production systems, and therefore preventing, identifying and rectifying problems with these aspects of our systems is to a large extent outside of our control.

Moreover, the business interruption insurance that we carry may not be sufficient to compensate us for the potentially significant losses, including the potential harm to the future growth of our business that may result from interruptions in our product lines as a result of system failures.

We depend on the continued growth of product developers' and engineers' e-commerce expectations when working with their custom parts manufacturers and their migration from 2D to 3D CAD software.

The business of selling custom parts over the Internet via an interactive web-based and automated user interface and quoting system is not widespread in our industry. Moreover, many product developers and engineers still utilize 2D CAD software. Concerns about privacy and technological and other problems may discourage some product developers and engineers from adopting the Internet as the medium for procuring their custom parts or adopting 3D CAD software, particularly in countries where e-commerce and 3D CAD software are not as prevalent as they are in our current markets or with product developers and engineers in industries not well suited to utilize our product lines, such as architecture. In order to expand our customer base, we must appeal to and procure customers who historically have used more traditional means of commerce and/or 2D CAD drawings to purchase their customer parts. If product developers and engineers are not sufficiently attracted to the value proposition of or satisfied with our web-based interface and quotation system, or product developers and engineers do not continue to migrate to 3D CAD software as we currently anticipate, our business could be adversely impacted.

Our business depends on the development and maintenance of the Internet infrastructure.

The success of our product lines will depend largely on the development and maintenance of the Internet infrastructure. This includes maintenance of a reliable network backbone with the necessary speed, data capacity, and security, as well as timely development of complementary products, for providing reliable Internet access and services. The Internet has experienced, and is likely to continue to experience, significant growth in the numbers of users and amount of traffic. The Internet infrastructure may be unable to support such demands. In addition, increasing numbers of users, increasing bandwidth requirements, or problems caused by "viruses," "worms," malware and similar programs may harm the performance of the Internet. The Internet has experienced a variety of outages and other delays as a result of damage to portions of its infrastructure, and it could face outages and delays in the future. These outages and delays could reduce the level of Internet usage generally as well as the level of usage of our product lines, which could adversely impact our business.

If the security of our customers' confidential information stored in our systems is breached or otherwise subjected to unauthorized access, our reputation or brand may be harmed, and we may be exposed to liability.

Our system stores, processes and transmits our customers' confidential information, including the intellectual property in their part designs, credit card information and other sensitive data. We rely on encryption, authentication and other technologies licensed from third parties, as well as administrative and physical safeguards, to secure such confidential information. Any compromise of our information security could damage our reputation and brand and expose us to a risk of loss, costly litigation and liability that would substantially harm our business and operating results. We may not have adequately assessed the internal and external risks posed to the security of our company's systems and information and may not have implemented adequate preventative safeguards or take adequate reactionary measures in the event of a security incident. In addition, most states have enacted laws requiring companies to notify individuals and often state authorities of data security breaches involving their personal data. These mandatory disclosures regarding a security breach often lead to widespread negative publicity, which may cause our existing and prospective customers to lose confidence in the effectiveness of our data security measures. Any security breach, whether successful or not, would harm our reputation and brand and could cause the loss of customers.

Global economic conditions may harm our ability to do business, increase our costs and negatively affect our stock price.

The prospects for economic growth in the United States and other countries remain uncertain and could worsen. Economic concerns and other issues such as reduced access to capital for businesses may cause product developers and engineers to further delay or reduce the product development projects that our business supports. Given the continued uncertainty concerning the global economy, we face risks that may arise from financial difficulties experienced by our suppliers, product developers and engineers and other related risks to our business.

Political and economic uncertainty arising from the outcome of the United Kingdom's recent referendum on its membership in the European Union could adversely affect our business and results of operations.

On June 23, 2016, the United Kingdom (UK) held a referendum in which voters approved a withdrawal from the European Union (EU), commonly referred to as "Brexit." The outcome of the Brexit vote triggered short-term financial volatility, including a decline in the value of the British Pound in comparison to both the United States dollar and the Euro. The impact of the Brexit referendum and the ongoing uncertainty associated with the outcome thereof may result in various long-term financial consequences for businesses operating in the UK, the EU and beyond. As a result of the referendum, it is expected that the British government will begin negotiating the terms of the UK's relationship with the EU going forward, including the terms of trade between the UK and the EU. Although the specific terms and the timeframe in which they will be negotiated are unknown, it is possible that these changes could adversely affect our business and results of operations.

We operate a global business that exposes us to additional risks.

We have established our operations in the United States, Europe and Japan and are seeking to further expand our international operations. As of December 31, 2016, we had sold products into approximately 60 countries. In addition to English, our website is available in British English, French, German, Italian, Japanese and Spanish. Our international revenue accounted for approximately 25%, 27% and 26% of our total revenue in the years ended December 31, 2016, 2015 and 2014, respectively. The future growth and profitability of our international business is subject to a variety of risks and uncertainties. Many of the following factors have adversely affected our international operations and sales to customers located outside of the United States and may again in the future:

- difficulties in staffing and managing foreign operations, particularly in new geographic locations;
- challenges in providing solutions across a significant distance, in different languages and among different cultures;
- rapid changes in government, economic and political policies and conditions, political or civil unrest or instability, terrorism or epidemics, and other similar outbreaks or events;
- fluctuations in foreign currency exchange rates;
- differences in product developer and engineer preferences and means of procuring parts;
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compliance with and changes in foreign laws and regulations, as well as U.S. laws affecting the activities of U.S. companies abroad, including those associated with export controls, tariffs and embargoes, other trade restrictions and antitrust and data privacy concerns;

- different, complex and changing laws governing intellectual property rights, sometimes affording companies lesser protection in certain areas;
- differing levels of use of the Internet or 3D CAD software;
- seasonal reductions in business activity in certain parts of the world, particularly during the summer months in Europe and holiday season;
- higher costs of doing business internationally;
- interruptions resulting from any events affecting raw material supply or manufacturing capabilities abroad;
- protectionist laws and business practices that favor local producers and service providers;
- taxation;
- energy costs;

- restrictions imposed by local labor practices and laws on our business and operations;

- workforce uncertainty in countries where labor unrest is more common than in the United States;

- transportation delays; and

- increased payment risk and higher levels of payment fraud.

Our business depends on product developers' and engineers' demand for our product lines, the general economic health of current and prospective customers, and companies' desire or ability to make investments in new products. A deterioration of global, regional or local political, economic or social conditions could affect potential customers in ways that reduce demand for our product lines, disrupt our manufacturing and sales plans and efforts or otherwise negatively impact our business. Acts of terrorism, wars, public health issues and increased energy costs could disrupt commerce in ways that could impair our ability to get products to our customers and increase our manufacturing and delivery costs. We have not undertaken hedging transactions to cover our foreign currency exposure, and changes in foreign currency exchange rates may negatively impact reported revenue and expenses. In addition, our sales are often made on unsecured credit terms, and a deterioration of political, economic or social conditions in a given country or region could reduce or eliminate our ability to collect accounts receivable in that country or region. In any of these events, our results of operations could be materially and adversely affected.

If a natural or man-made disaster strikes any of our manufacturing facilities, we will be unable to manufacture our products for a substantial amount of time and our sales will decline.

We manufacture all of our products in 9 manufacturing facilities, located in Maple Plain, Minnesota; Rosemount, Minnesota; Plymouth, Minnesota; Raleigh, North Carolina; Telford, United Kingdom; Feldkirchen, Germany; Eschenlohe, Germany; Rusko, Finland and Zama, Kanagawa, Japan. These facilities and the manufacturing equipment we use would be costly to replace and could require substantial lead time to repair or replace. Our facilities may be harmed by natural or man-made disasters, including, without limitation, earthquakes, floods, tornadoes, fires, hurricanes, tsunamis and nuclear disasters.

In the event any of our facilities are affected by a disaster, we may:

- be unable to meet the shipping deadlines of our customers;

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experience disruptions in our ability to process submissions and generate quotations, manufacture and ship parts, provide marketing and sales support and customer service, and otherwise operate our business, any of which could negatively impact our business;

- be forced to rely on third-party manufacturers;

- need to expend significant capital and other resources to address any damage caused by the disaster; and

- lose customers and be unable to regain those customers.

Although we possess insurance for damage to our property and the disruption of our business from casualties, this insurance may not be sufficient to cover all of our potential losses and may not continue to be available to us on acceptable terms, or at all.

If our present single or limited source suppliers become unavailable or inadequate, our customer relationships, results of operations and financial condition may be adversely affected.

We acquire substantially all of the manufacturing equipment and certain of our materials that are critical to the ongoing operation and future growth of our business from just a few third parties. We do not have long-term supply contracts with any of our suppliers and operate on a purchase-order basis. While most manufacturing equipment and materials for our products are available from multiple suppliers, certain of those items are only available from single or limited sources. Should any of our present single or limited source suppliers for manufacturing equipment or materials become unavailable or inadequate, or impose terms unacceptable to us such as increased pricing terms, we could be required to spend a significant amount of time and expense to develop alternate sources of supply, and we may not be successful in doing so on terms acceptable to us, or at all. Natural disasters, such as hurricanes, may affect our supply of materials, particularly resins, from time to time, and we may purchase larger amounts of certain materials in anticipation of future shortages or increases in pricing. In addition, if we were unable to find a suitable supplier for a particular type of manufacturing equipment or material, we could be required to modify our existing business processes and offerings to accommodate the situation. As a result, the loss of a single or limited source supplier could adversely affect our relationship with our customers and our results of operations and financial condition.

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We may not be able to adequately protect or enforce our intellectual property rights, which could impair our competitive position.

Our success and future revenue growth will depend, in part, on our ability to protect our intellectual property. We rely primarily on patents, licenses, trademarks and trade secrets, as well as non-disclosure agreements and other methods, to protect our proprietary technologies and processes globally. Despite our efforts to protect our proprietary technologies and processes, it is possible that competitors or other unauthorized third parties may obtain, copy, use or disclose our technologies and processes. We cannot assure you that any of our existing or future patents will not be challenged, invalidated or circumvented. As such, any rights granted under these patents may not provide us with meaningful protection. We may not be able to obtain foreign patents corresponding to our United States patents. Even if foreign patents are granted, effective enforcement in foreign countries may not be available. If our patents and other intellectual property do not adequately protect our technology, our competitors may be able to offer product lines similar to ours. Our competitors may also be able to develop similar technology independently or design around our patents. Any of the foregoing events would lead to increased competition and lower revenue or gross margin, which would adversely affect our net income.

We may be subject to infringement claims.

We may be subject to intellectual property infringement claims from individuals, vendors and other companies who have acquired or developed patents in the fields of CNC machining, injection molding or part production for purposes of developing competing products or for the sole purpose of asserting claims against us. Any claims that our products or processes infringe the intellectual property rights of others, regardless of the merit or resolution of such claims, could cause us to incur significant costs in responding to, defending and resolving such claims, and may prohibit or otherwise impair our ability to commercialize new or existing products. If we are unable to effectively defend our processes, our market share, sales and profitability could be adversely impacted.

Our failure to expand our intellectual property portfolio could adversely affect the growth of our business and results of operations.

Expansion of our intellectual property portfolio is one of the available methods of growing our revenue and our profits. This involves a complex and costly set of activities with uncertain outcomes. Our ability to obtain patents and other intellectual property can be adversely affected by insufficient inventiveness of our employees, by changes in intellectual property laws, treaties, and regulations, and by judicial and administrative interpretations of those laws, treaties and regulations. Our ability to expand our intellectual property portfolio could also be adversely affected by the lack of valuable intellectual property for sale or license at affordable prices. There is no assurance that we will be able to obtain valuable intellectual property in the jurisdictions where we and our competitors operate or that we will be able to use or license that intellectual property.

We may be subject to product liability claims, which could result in material expense, diversion of management time and attention and damage to our business and reputation and brand.

The prototype parts we manufacture and the parts we manufacture in low volumes may contain undetected defects or errors that are not discovered until after the products have been installed and used by customers. This could result in claims from customers or others, damage to our business and reputation and brand, or significant costs to correct the defect or error.

We attempt to include provisions in our agreements with customers that are designed to limit our exposure to potential liability for damages arising from defects or errors in our products. However, it is possible that these limitations may not be effective as a result of unfavorable judicial decisions or laws enacted in the future.

The sale and support of our products entails the risk of product liability claims. Any product liability claim brought against us, regardless of its merit, could result in material expense, diversion of management time and attention, damage to our business and reputation and brand, and cause us to fail to retain existing customers or to fail to attract new customers.

Government regulation of the Internet and e-commerce is evolving, and unfavorable changes or failure by us to comply with these regulations could substantially harm our business and results of operations.

We are subject to general business regulations and laws as well as regulations and laws specifically governing the Internet and e-commerce. Existing and future laws and regulations may impede the growth of the Internet or other online services. These regulations and laws may cover taxation, restrictions on imports and exports, customs, tariffs, user privacy, data protection, pricing, content, copyrights, distribution, electronic contracts and other communications, consumer protection, the provision of online payment services, broadband residential Internet access and the characteristics and quality of products and product lines. It is not clear how existing laws governing issues such as property use and ownership, sales and other taxes, fraud, libel and personal privacy apply to the Internet and e-commerce, especially where these laws were adopted prior to the advent of the Internet and do not contemplate or address the unique issues raised by the Internet or e-commerce. Those laws that do reference the Internet are being interpreted by the courts and their applicability and reach are therefore uncertain. The costs of compliance with these regulations may increase in the future as a result of changes in the regulations or the interpretation of them. Further, any failures on our part to comply with these regulations may subject us to significant liabilities. Those current and future laws and regulations or unfavorable resolution of these issues may substantially harm our business and results of operations.

Changes in, or interpretation of, tax rules and regulations may impact our effective tax rate and future profitability.

We are a multinational company based in the United States and subject to tax in multiple tax jurisdictions, both domestic and abroad. Our future effective tax rates could be adversely affected by changes in statutory tax rates or interpretation of tax rules and regulations in jurisdictions in which we do business, changes in the amount of revenue or earnings in the countries with varying statutory tax rates, or by changes in the valuation of deferred tax assets and liabilities.

In addition, we are subject to audits and examinations of previously filed income tax returns by the Internal Revenue Service, or IRS, and other domestic and foreign tax authorities. We regularly assess the potential impact of such examinations to determine the adequacy of our provision for income taxes and have reserved for potential adjustments that may result from the current examinations. We believe such estimates to be reasonable; however, there is no assurance that the final determination of any examination will not have an adverse effect on our operating results and financial position.

We may require additional capital to support business growth, and this capital might not be available on acceptable terms, if at all.

We intend to continue to make investments to support our business growth and may require additional funds to respond to business challenges, including the need to complement our growth strategy, increase market share in our current markets or expand into other markets, or broaden our technology, intellectual property or product line capabilities. Accordingly, we may need to engage in equity or debt financings to secure additional funds. If we raise additional funds through future issuances of equity or convertible debt securities, our existing shareholders could suffer significant dilution, and any new equity securities we issue could have rights, preferences and privileges superior to those of holders of our common stock. Any debt financing we secure in the future could involve restrictive covenants relating to our capital raising activities and other financial and operational matters, which may make it more difficult for us to obtain additional capital and to pursue business opportunities, including potential acquisitions. We may not be able to obtain additional financing on terms favorable to us, if at all. If we are unable to obtain adequate financing or financing on terms satisfactory to us when we require it, our ability to continue to support our business growth and to respond to business challenges could be significantly impaired, and our business may be harmed.

Any acquisition, strategic relationship, joint venture or investment could disrupt our business and harm our operating results and financial condition.

Our business and our customer base have been built primarily through organic growth. However, from time to time, we may selectively pursue acquisitions, strategic relationships, joint ventures or investments that we believe may allow us to complement our growth strategy, increase market share in our current markets or expand into other markets, or broaden our technology, intellectual property or product line capabilities. For example, in April 2014, we acquired FineLine to enable us to offer our customers 3D printing manufacturing processes and in October 2015, we acquired Alphaform to enable us to expand our 3D printing capabilities in Europe. We cannot forecast the number, timing or size of any future acquisitions or other similar strategic transactions, or the effect that any such transactions might have on our operating or financial results. We have limited experience engaging in these types of transactions. Such transactions may be complex, time consuming and expensive, and may present numerous challenges and risks including:

- an acquired company, asset or technology not furthering our business strategy as anticipated;
- difficulties entering and competing in new product or geographic markets and increased competition, including price competition;
- integration challenges;
- challenges in working with strategic partners and resolving any related disagreements or disputes;
- high valuation for a company, asset or technology, or changes in the economic or market conditions or assumptions underlying our decision to make an acquisition;
- significant problems or liabilities, including increased intellectual property and employment related litigation exposure, associated with acquired businesses, assets or technologies;
- acquisition of a significant amount of goodwill, which could result in future impairment charges that would reduce our earnings; and
- requirements to record substantial charges and amortization expense related to certain purchased intangible assets, deferred stock compensation and other items, as well as other charges or expenses.

Any one of these challenges or risks could impair our ability to realize any benefit from our acquisitions, strategic relationships, joint ventures or investments after we have expended resources on them, as well as divert our management's attention. Any failure to successfully address these challenges or risks could disrupt our business and harm our operating results and financial condition. Moreover, any such transaction may not be viewed favorably by investors or stakeholders.

In addition, from time to time we may enter into negotiations for acquisitions, relationships, joint ventures or investments that are not ultimately consummated. These negotiations could result in significant diversion of management time, as well as substantial out-of-pocket costs.

We depend in part on licenses of technologies from third parties in order to deliver our solutions, and, as a result, our business is dependent in part on the availability of such licenses on commercially reasonable terms.

We currently, and will continue to, license certain technologies from third parties. While these licenses are not material to our financial results, their function in our business is integral to our operations. We cannot be certain that these third-party content licenses will be available to us on commercially reasonable terms or that we will be able to successfully integrate the technology into our solutions. These third-party licenses may expose us to increased risk, including risks associated with the assimilation of new technology sufficient to offset associated acquisition and maintenance costs. The inability to obtain any of these licenses could result in delays in solution development until equivalent technology can be identified and integrated. Any such delays in services could cause our business, operating results and financial condition to suffer.

Our business involves the use of hazardous materials, and we and our suppliers must comply with environmental laws and regulations, which can be expensive and restrict how we do business.

Our business involves the controlled storage, use and disposal of hazardous materials. We and our suppliers are subject to federal, state and local as well as foreign laws and regulations governing the use, manufacture, storage, handling and disposal of these hazardous materials. Although we believe that the safety procedures utilized by us and our suppliers for handling and disposing of these materials comply with the standards prescribed by these laws and regulations, we cannot eliminate the risk of accidental contamination or injury from these materials. In the event of an accident, state, federal or foreign authorities may curtail the use of these materials and interrupt our business operations. We do not currently maintain hazardous materials insurance coverage. If we are subject to any liability as a result of activities involving hazardous materials, our business and financial condition may be adversely affected and our reputation and brand may be harmed.

If we are unable to meet regulatory quality standards applicable to our manufacturing and quality processes for the parts we manufacture, our business, financial condition or operating results could be harmed.

As a manufacturer of CNC-machined and injection-molded custom parts, we are required to meet certain regulatory standards, including International Organization for Standardization, or ISO, 9001:2008 for our manufacturing facilities in Minnesota. In North Carolina, we are required to meet ISO 9001:2008 standards for our plastics manufacturing and AS9100 standards for our metals manufacturing. We are also able to meet regulatory standards ISO 9001:2008 at our manufacturing facilities in Feldkirchen, Germany, Eschenlohe, Germany and Rusko, Finland. We also meet regulatory standard ISO 13485 at our manufacturing facility in Eschenlohe, Germany. If any regulatory inspection reveals that we are not in compliance with applicable standards, regulators may take action against us, including issuing a warning letter, imposing fines on us, requiring a recall of the parts we manufactured or closing our manufacturing facilities. If any of these actions were to occur, it could harm our reputation as well as our business, financial condition and operating results. In addition, we may need to obtain additional certifications in the future and there are no guarantees we would be able to do so on a timely basis, if at all. Moreover, obtaining and maintaining required regulatory certifications can be costly and divert management’s attention.

We are subject to payment-related risks.

We accept payments using a variety of methods, including credit card, customer invoicing, physical bank check and payment upon delivery. As we offer new payment options to our customers, we may be subject to additional regulations, compliance requirements and fraud risk. For certain payment methods, including credit and debit cards, we pay interchange and other fees, which may increase over time and raise our operating costs and lower profitability. We rely on third parties to provide payment processing services, including the processing of credit cards, debit cards or electronic checks, and it could disrupt our business if these companies become unwilling or unable to provide these services to us. We are also subject to payment card association operating rules, certification requirements and rules

governing electronic funds transfers, which could change or be reinterpreted to make it difficult or impossible for us to comply. If we fail to comply with these rules or requirements, we may be subject to fines and higher transaction fees and lose our ability to accept credit and debit card payments from our customers, process electronic funds transfers, or facilitate other types of online payments, and our business and operating results could be adversely affected.

Risks Relating to Ownership of Our Common Stock

Our stock price has been and may continue to be volatile.

In the year ended December 31, 2016, our common stock traded as high as $82.06 and as low as $43.10. The market for our common stock may become less active, liquid or orderly, which could depress the trading price of our common stock. Some of the factors, many of which are outside of our control, that may cause the market price of our common stock to fluctuate include:

- fluctuations in our financial condition and operating results;
- our ability to retain and attract customers and increase net sales;
- pricing pressures due to competition or otherwise and changes in gross margins;
- changes in general economic and market conditions, economic uncertainty and changes in product development activity levels;
- announcements by us or our competitors of technological innovations or new product or product lines offerings or significant acquisitions;

- timing, effectiveness, and costs of expansion and upgrades of our offerings, systems and infrastructure;
- changes in key personnel;
- success in entry into new markets and expansion efforts;
- the public's response to press releases or other public announcements by us or third parties, including our filings with the Securities and Exchange Commission and announcements relating to litigation;
- the projections we may provide to the public, any changes in these projections or our failure to meet these projections;
- the issuance of new or updated research or reports by any securities or industry analysts who follow our common stock, changes in analysts' financial estimates or ratings, and failure of securities analysts to initiate or maintain coverage of our common stock;
- changes in the market valuations of similar companies;
- significant lawsuits, including patent or shareholder litigation;
- changes in laws or regulations applicable to us;
- changes in accounting principles;
- the sustainability of an active trading market for our common stock;
- future sales of our common stock by us or our shareholders, including sales by our officers, directors and significant shareholders;
- share price and volume fluctuations attributable to inconsistent trading levels of our shares;
- the expiration of contractual lock-up agreements; and
-

other events or factors, including those resulting from war, acts of terrorism, natural disasters or responses to these events.

In addition, the stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. In the past, shareholders have instituted securities class action litigation following periods of market volatility. If we were to become involved in securities litigation, we could incur substantial costs and our resources and the attention of management could be diverted from our business.

If securities or industry analysts publish inaccurate or unfavorable research or reports about our business, our stock price and trading volume could decline.

The trading market for our common stock depends, in part, on the research and reports that securities or industry analysts publish about us or our business. We do not have any control over these analysts. If one or more of the analysts who covers us downgrades our common stock, changes their opinion of our shares or publishes inaccurate or unfavorable research about our business, our stock price would likely decline. If one or more of these analysts ceases coverage of us or fails to publish reports on us regularly, demand for our common stock could decrease and we could lose visibility in the financial markets, which could cause our stock price and trading volume to decline.

Our failure to maintain proper and effective internal controls over financial reporting and otherwise comply with Section 404 of the Sarbanes-Oxley Act or prevent or detect misstatements in our financial statements in the future could harm our business and cause a decrease in our stock price.

Ensuring that we have internal financial and accounting controls and procedures adequate to produce accurate financial statements on a timely basis is a costly and time-consuming effort that needs to be re-evaluated frequently. The Sarbanes-Oxley Act requires, among other things, that we maintain effective internal control over financial reporting and disclosure controls and procedures. In particular, we are required to perform annual system and process evaluation and testing of our internal control over financial reporting to allow management and our independent registered public accounting firm to report on the effectiveness of our internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act. If we are not able to comply with the requirements of Section 404 in the future, or if we fail to prevent or detect misstatements in the financial statements we include in our reports filed with the SEC, our business could be harmed and the market price of our common stock could decline.

Anti-takeover provisions in our charter documents and Minnesota law might discourage or delay acquisition attempts for us that you might consider favorable.

Our Third Amended and Restated Articles of Incorporation, as amended, and Amended and Restated By-Laws contain provisions that may make the acquisition of our company more difficult without the approval of our board of directors. These provisions:

- permit our board of directors to issue up to 10,000,000 shares of preferred stock, with any rights, preferences and privileges as our board may designate, including the right to approve an acquisition or other change in our control;
- provide that the authorized number of directors may be changed by resolution of the board of directors;
- provide that all vacancies, including newly created directorships, may, except as otherwise required by law, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;
- provide that shareholders seeking to present proposals before a meeting of shareholders or to nominate candidates for election as directors at a meeting of shareholders must provide notice in writing in a timely manner, and also specify requirements as to the form and content of a shareholder's notice; and
- do not provide for cumulative voting rights.

We are subject to the provisions of Section 302A.673 of the Minnesota Statutes, which regulates business combinations. Section 302A.673 generally prohibits any business combination by an issuing public corporation, or any of its subsidiaries, with an interested shareholder, which means any shareholder that purchases 10% or more of the corporation's voting shares within four years following the date the person became an interested shareholder, unless the business combination is approved by a committee composed solely of one or more disinterested members of the corporation's board of directors before the date the person became an interested shareholder.

These anti-takeover provisions could discourage, delay or prevent a transaction involving a change in control of our company, even if doing so would benefit our shareholders. These provisions could also discourage proxy contests and make it more difficult for you and other shareholders to elect directors of your choosing and to cause us to take other corporate actions you desire.

We do not expect to pay any cash dividends for the foreseeable future.

We have never declared or paid any cash dividends on our common stock, and we do not anticipate that we will pay any such cash dividends for the foreseeable future. We anticipate that we will retain all of our future earnings for use in the business and for general corporate purposes. Any determination to pay dividends in the future will be at the discretion of our board of directors and will depend upon results of operations, financial condition, contractual restrictions, restrictions imposed by applicable law and other factors our board of directors deems relevant.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We believe that our facilities are well maintained and of sufficient capacity to support our current operations. We have facilities in the following regions:

United States

Our corporate headquarters are located in Maple Plain, Minnesota in a facility we own encompassing approximately 95,000 square feet of office space. We also own a nearby facility encompassing approximately 35,000 square feet of manufacturing space. We lease an additional facility on a property adjacent to our headquarters that encompasses approximately 40,000 square feet of manufacturing space. The lease for this facility expires in 2017. We own a facility in Rosemount, Minnesota that encompasses approximately 130,000 square feet of manufacturing and office space. We also own a facility in Plymouth, Minnesota that encompasses approximately 170,000 square feet of manufacturing and office space.

In April 2014, we purchased FineLine Prototyping, Inc. (FineLine) and assumed the leases of two facilities in Raleigh, North Carolina. The two facilities we lease are approximately 10,000 square feet each. We also purchased a facility in Cary, North Carolina in 2015 that encompasses approximately 77,000 square feet of manufacturing and office space. In 2016, we moved into the new facility in Cary, North Carolina and consolidated operations. As a result, we exited the lease for one of the Raleigh facilities and plan to exit the lease for the other Raleigh facility in 2017.

Europe

Our European operations are headquartered in Telford, United Kingdom in a facility we own encompassing approximately 126,000 square feet of office and manufacturing space.

We also lease office space in Mosbach, Germany, Le Bourget du Lac, France and Novara, Italy, for sales, customer service and technical support staff. The leases expire at various times from 2017 to 2023. In October 2015, we purchased certain assets, including shares of select subsidiaries, of Alphaform AG (Alphaform), headquartered in Feldkirchen (Munich), Germany. As a result of the acquisition, we lease manufacturing and office facilities encompassing approximately 60,000 square feet in Feldkirchen, Germany, approximately 16,000 square feet in Eschenlohe, Germany and approximately 24,000 square feet in Rusko, Finland. The leases expire at various times from 2018 to 2022.

Japan

Our Japan operations are headquartered in Zama, Kanagawa, Japan (southwest of Tokyo). In 2016, we moved into a new leased facility encompassing approximately 96,000 square feet of office and manufacturing space. The lease expires in April 2023.

Item 3. Legal Proceedings

From time to time, we are subject to various legal proceedings and claims that arise in the ordinary course of our business activities. Although the results of litigation and claims cannot be predicted with certainty, as of the date of this Annual Report on Form 10-K, we do not believe we are party to any litigation the outcome of which, if determined adversely to us, would individually or in the aggregate be reasonably expected to have a material adverse effect on our business.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

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

Our common stock has traded on the New York Stock Exchange (NYSE) under the symbol "PRLB" since February 24, 2012. Prior to that date, there was no public market for our common stock. The following table sets forth, for the periods indicated, the high and low intraday sales prices for our common stock as reported on the NYSE:

	Fiscal 2016		Fiscal 2015	
	High	Low	High	Low
First Quarter	$79.65	$51.61	$74.82	$57.30
Second Quarter	$82.06	$55.07	$79.00	$65.84
Third Quarter	$61.62	$50.50	$79.95	$65.82
Fourth Quarter	$59.65	$43.10	$69.48	$58.84

On February 16, 2017, the last reported sale price of our common stock on the NYSE was $55.65 per share. As of February 16, 2017, we had 13 holders of record of our common stock. The actual number of shareholders is greater than this number of record holders, and includes shareholders who are beneficial owners, but whose shares are held in street name by brokers and other nominees.

We have never declared or paid any cash dividends on our capital stock. We currently intend to retain all available funds and any future earnings to support our operations and finance the growth and development of our business. We do not intend to pay cash dividends on our common stock for the foreseeable future. Any future determination related to our dividend policy will be made at the discretion of our board of directors and will depend on then-existing conditions, including our financial condition, operating results, contractual restrictions, capital requirements, business prospects and other factors our board of directors may deem relevant.

Outstanding Equity Awards

The following table summarizes, as of December 31, 2016, information about shares of our common stock that may be issued under equity compensation plans approved by shareholders and plans not approved by shareholders:

Plan Category	Number of shares to be issued upon exercise of outstanding options, warrants and rights	Weighted-average exercise price of outstanding options, warrants and rights	Number of shares remaining available for future issuance under equity compensation plans (excluding shares in first column)
Equity compensation plans approved by shareholders[1]	784,744	$32.66	6,778,872[2]
Equity compensation plans not approved by shareholders	None	N/A	None

(1) Includes the 2000 Stock Option Plan, the 2012 Long-Term Incentive Plan and our Employee Stock Purchase Plan.

(2) Includes 1,285,314 shares remaining available for issuance as of December 31, 2016 under our

Employee
Stock
Purchase
Plan.

Performance Graph

The following graph shows a comparison from February 24, 2012 (the date our common stock commenced trading on the NYSE) through December 31, 2016 of the cumulative total return for our common stock, the S&P 500 Index and the Russell 2000 Index. We have selected the Russell 2000 Index because the Russell 2000 Index measures the performance of the small market capitalization segment of U.S. equity instruments and we are a member company included in the Russell 2000 Index. Such returns are based on historical results and are not intended to suggest future performance. Data for the S&P 500 Index and the Russell 2000 Index assume reinvestment of dividends.

	Period Ending										
Index	02/23/12	06/30/12	12/31/12	06/30/13	12/31/13	06/30/14	12/31/14	06/30/15	12/31/15	06/30/16	12/31/16
Proto Labs, Inc.	100.00	179.75	246.38	406.06	444.88	512.00	419.75	421.75	398.06	359.75	320.94
S&P 500	100.00	99.90	104.60	117.81	135.56	143.77	151.01	151.31	149.91	153.94	164.20
Russell 2000	100.00	96.29	102.43	117.88	140.33	143.86	145.28	151.22	136.98	138.91	163.66

Unregistered Sales of Equity Securities and Issuer Purchases of Equity Securities

We did not sell any unregistered equity securities or purchase any of our securities during the year ended December 31, 2016. On February 9, 2017, we announced that our board of directors had authorized the repurchase of shares of our common stock from time to time on the open market or in privately negotiated purchases, at an aggregate purchase price of up to $50 million. The timing and amount of any share repurchases will be determined by our management based on market conditions and other factors. The term of the program runs through December 31, 2021.

Item 6. Selected Financial Data

The following tables set forth selected consolidated financial data for the periods and at the dates indicated. The selected consolidated statements of comprehensive income data for the years ended December 31, 2016, 2015 and 2014 and selected consolidated balance sheets data as of December 31, 2016 and 2015 are derived from our audited

consolidated financial statements included in Item 8. “Financial Statements and Supplementary Data” of this Annual Report on Form 10-K. The selected consolidated statements of comprehensive income data for the years ended December 31, 2013 and 2012 and selected consolidated balance sheet data as of December 31, 2014, 2013 and 2012 are derived from our audited consolidated financial statements not included in this report.

The historical results presented below are not necessarily indicative of the results to be expected for any future period. You should read this selected consolidated financial data in conjunction with Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and the consolidated financial statements and related notes appearing in Item 8. “Financial Statements and Supplementary Data” of this Annual Report on Form 10-K.

(in thousands, except share and per share amounts)	Year Ended December 31, 2016	2015	2014	2013	2012
Consolidated Statements of Comprehensive Income Data					
Revenue	$298,055	$264,106	$209,583	$163,112	$125,991
Cost of revenue	131,118	109,703	81,182	61,410	49,853
Gross profit	166,937	154,403	128,401	101,702	76,138
Operating expenses:					
Marketing and sales	46,131	39,188	29,144	22,386	18,098
Research and development	22,388	18,350	16,607	11,863	9,137
General and administrative	36,651	29,716	22,122	16,154	13,957
Total operating expenses	105,170	87,254	67,873	50,403	41,192
Income from operations	61,767	67,149	60,528	51,299	34,946
Other income, net	2,454	712	3	279	23
Income before income taxes	64,221	67,861	60,531	51,578	34,969
Provision for income taxes	21,514	21,347	18,896	16,301	10,944
Net income	42,707	46,514	41,635	35,277	24,025
Net income attributable to common shareholders[(1)]	$42,707	$46,514	$41,635	$35,277	$24,025
Net income per share[(1)]					
Basic	$1.62	$1.79	$1.62	$1.40	$1.03
Diluted	$1.61	$1.77	$1.60	$1.36	$0.98
Weighted average shares outstanding[(1)]					
Basic	26,365,173	26,005,858	25,692,699	25,198,556	23,373,593
Diluted	26,564,639	26,320,284	26,100,320	25,859,741	24,443,665
Other comprehensive income (loss) (net of tax)					
Foreign currency translation adjustments	$(5,541)	$(2,283)	$(1,838)	$(163)	$(190)
Comprehensive income	$37,166	$44,231	$39,797	$35,114	$23,835

Stock-based compensation expense included in the statements of comprehensive income data above is as follows:

	Year Ended December 31,				
(in thousands)	**2016**	**2015**	**2014**	**2013**	**2012**
Stock options and grants	$6,177	$5,580	$4,386	$3,084	$2,539
Employee stock purchase plan	598	502	423	377	500
Total stock-based compensation expense	$6,775	$6,082	$4,809	$3,461	$3,039
Cost of revenue	$691	$513	$386	$316	$335
Operating expenses:					
Marketing and sales	977	1,074	927	610	418
Research and development	1,396	1,285	1,048	754	486
General and administrative	3,711	3,210	2,448	1,781	1,800
Total stock-based compensation expense	$6,775	$6,082	$4,809	$3,461	$3,039

	Year Ended December 31,				
(in thousands)	**2016**	**2015**	**2014**	**2013**	**2012**
Consolidated Balance Sheets Data					
Cash and cash equivalents	$68,795	$47,653	$43,329	$43,039	$36,759
Working capital	134,357	111,740	89,102	96,132	78,617
Total assets	414,241	361,036	287,031	230,175	172,722
Total liabilities	34,408	33,391	21,492	18,532	16,023
Total shareholders' equity	$379,833	$327,645	$265,539	$211,643	$156,699

(1) See Note 3 of Notes to Consolidated Financial Statements for an explanation of the method used to calculate net income per

basic and diluted share attributable to common shareholders and weighted average shares outstanding for the years ended December 31, 2016, 2015 and 2014, respectively.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K. This discussion and analysis contains forward-looking statements that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward- looking statements as a result of various factors, including those set forth under "Risk Factors" and elsewhere in this Annual Report on Form 10-K.

Overview

We are an e-commerce driven digital manufacturer of quick-turn, on-demand injection-molded, CNC-machined, and 3D printed custom parts for prototyping and short-run production. We provide "Real Parts, Really Fast" to product developers and engineers worldwide, who are under increasing pressure to bring their finished products to market faster than their competition. We believe custom parts manufacturing has historically been an underserved market due to the inefficiencies inherent in the quotation, equipment set-up and non-recurring engineering processes required to produce custom parts. Our proprietary technology eliminates most of the time-consuming and expensive skilled labor conventionally required to quote and manufacture parts in low volumes, and our customers conduct nearly all of their business with us over the Internet. We target our product lines to the millions of product developers and engineers who use 3D CAD software to design products across a diverse range of end-markets. Our primary manufacturing product lines currently include Injection Molding, CNC Machining and 3D Printing.

We have experienced significant growth since our inception. Since we first introduced our Injection Molding product line in 1999, we have steadily expanded the size and geometric complexity of the injection-molded parts we are able to manufacture, and we continue to extend the diversity of materials we are able to support. Similarly, since first introducing our CNC Machining product line in 2007, we have expanded the range of part sizes, design geometries and materials we can support. In 2014, we acquired FineLine Prototyping, Inc. (FineLine) to expand the number of process types we offer to include stereolithography (SL), selective laser sintering (SLS) and direct metal laser sintering (DMLS). We also continually seek to enhance other aspects of our technology and manufacturing processes, including our interactive web-based and automated user interface and quoting system. We intend to continue to invest significantly to enhance our technology and manufacturing processes and expand the range of our existing capabilities with the aim of meeting the needs of a broader set of product developers and engineers. As a result of the factors described above, many of our customers tend to return to Proto Labs to meet their ongoing needs, with approximately 67%, 85% and 87% of our revenue in 2016, 2015 and 2014, respectively, derived from existing customers.

We have established our operations in the United States, Europe and Japan, which we believe are three of the largest geographic markets where product developers and engineers are located. We entered the European market in 2005, launched operations in Japan in late 2009 and further expanded into Europe through our acquisition of Alphaform in 2015. As of December 31, 2016, we had sold products into approximately 60 countries. Our revenue outside of the

United States accounted for approximately 25%, 27% and 26% of our consolidated revenue in the years ended December 31, 2016, 2015 and 2014, respectively. We intend to continue to expand our international sales efforts and believe opportunities exist to serve the needs of product developers and engineers in select new geographic regions.

We have grown our total revenue from $126.0 million in 2012 to $298.1 million in 2016. During this period, our operating expenses increased from $41.2 million in 2012 to $105.2 million in 2016. We have grown our income from operations from $34.9 million in 2012 to $61.8 million in 2016. Our recent growth in revenue and income from operations has been accompanied by increased cost of revenues and operating expenses. We expect to increasingly invest in our operations to support anticipated future growth as discussed more fully below.

In addition, we believe that a number of trends affecting our industry have affected our results of operations and may continue to do so. For example, we believe that many of our target product developer and engineer customers have increasing e-commerce expectations, are facing increased pressure to accelerate the time to market for their products and continue to migrate from using 2D CAD to using 3D CAD for their design needs. We believe we continue to be well positioned to benefit from these trends, given our proprietary technology that enables us to automate and integrate the majority of activities involved in procuring custom parts, starting with our elegant web interface through which a product developer or engineer submits a 3D CAD part design. While our business may be positively affected by these trends, our results may also be favorably or unfavorably impacted by other trends that affect product developer and engineer orders for custom parts in low volumes, including, among others, changes in product developer and engineer preferences or needs, developments in our industry and among our competitors, and factors impacting new product development volume such as economic conditions. For a more complete discussion of the risks facing our business, see Part 1 Item 1A. “Risk Factors.”

Key Financial Measures and Trends

Revenue

Our operations are comprised of three geographic operating segments in the United States, Europe and Japan. Revenue is derived from our Injection Molding, CNC Machining and 3D Printing product lines. Injection Molding revenue consists of sales of custom injection molds and injection-molded parts. CNC Machining revenue consists of sales of CNC-machined custom parts. 3D Printing revenue consists of sales of 3D-printed parts. Our revenue is generated from a diverse customer base, with no single customer company representing more than 2% of our total revenue in 2016. Our historical and current efforts to increase revenue have been directed at gaining new customers and selling to our existing customer base by increasing marketing and selling activities, offering additional product lines such as the introduction of our CNC Machining product line in 2007 and 3D Printing through our acquisition of FineLine in 2014, expanding internationally such as the opening of our Japanese office in 2009 and through our acquisition of Alphaform in October 2015, improving the usability of our product lines such as our web-centric applications, and expanding the breadth and scope of our products by adding more sizes and materials to our offerings.

During 2016, we served 31,457 unique product developers and engineers, an increase of 15.5% over the same period in 2015. Of those product developers and engineers served in 2016, 16,149 were existing product developers and engineers who had ordered from us in the past, an increase of 20% over the comparable period in 2015, and 15,308 were new product developers and engineers who ordered from us for the first time in 2016, an increase of 12% over the comparable period in 2015.

During 2015, we served 27,235 unique product developers and engineers, an increase of 26% over the same period in 2014. Of those product developers and engineers served in 2015, 13,504 were existing product developers and engineers who had ordered from us in the past, an increase of 37% over the comparable period in 2014, and 13,731 were new product developers and engineers who ordered from us for the first time in 2015, an increase of 17% over the comparable period in 2014.

During 2014, we served 21,552 unique product developers and engineers, an increase of 34% over the same period in 2013. Of those product developers and engineers served in 2014, 9,839 were existing product developers and engineers who had ordered from us in the past, an increase of 26% over the comparable period in 2013, and 11,713 were new product developers and engineers who ordered from us for the first time in 2014, an increase of 41% over the comparable period in 2013. We experienced strong growth in the number of unique product developers and engineers served in 2014, partially as a result of our acquisition of FineLine in April 2014.

Cost of Revenue, Gross Profit and Gross Margin

Cost of revenue consists primarily of raw materials, equipment depreciation, employee compensation, benefits, stock-based compensation, facilities costs and overhead allocations associated with the manufacturing process for molds and custom parts. We expect cost of revenue to increase in absolute dollars, but remain relatively constant as a percentage of total revenue.

Our business model requires that we invest in our capacity well in advance of demand to ensure we can fulfill the expectations for quick delivery of our products to our customers. Therefore, during each of 2016, 2015 and 2014 we made significant investments in additional factory space and infrastructure in the United States. We also made significant investments in additional factory space in Japan in 2016. We expect to continue to grow in future periods, which will result in the need for additional investments in factory space and equipment. We expect that these additional costs for factory and equipment expansion can be absorbed by revenue growth, and allow gross margins to remain relatively consistent over time.

We define gross profit as our revenue less our cost of revenue, and we define gross margin as gross profit expressed as a percentage of revenue. Our gross profit and gross margin are affected by many factors, including our pricing, sales volume and manufacturing costs, the costs associated with increasing production capacity, the mix between domestic and foreign revenue sources and foreign exchange rates.

Our gross margins vary between geographic markets due primarily to the costs associated with starting new factories, available capacity and our operating maturity in these markets. We believe that over time and with growth and maturity of our international business, gross margins will be generally consistent through all our markets.

Operating Expenses

Operating expenses consist of marketing and sales, research and development and general and administrative expenses. Personnel-related costs are the most significant component in each of these categories.

Our recent growth in operating expenses is mainly due to higher headcounts to support our growth and expansion, and we expect that trend to continue. Our business strategy is to continue to be a leading online and technology-enabled manufacturer of quick-turn, on-demand injection-molded, CNC-machined, CNC-turned and 3D printed custom parts for prototyping and low-volume production. In order to achieve our goals, we anticipate continued substantial investments in technology and personnel, resulting in increased operating expenses.

Marketing and sales. Marketing and sales expense consists primarily of employee compensation, benefits, commissions, stock-based compensation, marketing programs such as electronic, print and pay-per-click advertising, trade shows and other related overhead. We expect sales and marketing expense to increase in the future as we increase the number of marketing and sales professionals and marketing programs targeted to increase our customer base.

Research and development. Research and development expense consists primarily of employee compensation, benefits, stock-based compensation, depreciation on equipment and other related overhead. All of our research and development costs have been expensed as incurred. We expect research and development expense to increase in the future as we seek to enhance and expand our product line offerings.

General and administrative. General and administrative expense consists primarily of employee compensation, benefits, stock-based compensation, professional service fees related to accounting, tax and legal and other related overhead. We expect general and administrative expense to increase in the future as we continue to grow and expand as a global organization.

Other Income, Net

Other income, net primarily consists of foreign currency-related gains and losses and interest income on cash balances and investments. Our foreign currency-related gains and losses will vary depending upon movements in underlying exchange rates. Our interest income will vary each reporting period depending on our average cash balances during the period, composition of our marketable security portfolio and the current level of interest rates.

Provision for Income Taxes

Provision for income taxes is comprised of federal, state, local and foreign taxes based on pre-tax income. We expect income taxes to increase as our taxable income increases and we expect our effective tax rate to remain relatively constant.

Results of Operations

The following table summarizes our results of operations and the related changes for the periods indicated. The results below are not necessarily indicative of the results for future periods.

(dollars in thousands)	Year Ended December 31, 2016		2015		Change $	Change %	Year Ended December 31, 2015		2014		Change $
Revenue	$298,055	100.0%	$264,106	100.0%	$33,949	12.9	$264,106	100.0%	$209,583	100.0%	$54,52
Cost of revenue	131,118	44.0	109,703	41.5	21,415	19.5	109,703	41.5	81,182	38.7	28,52
Gross profit	166,937	56.0	154,403	58.5	12,534	8.1	154,403	58.5	128,401	61.3	26,00
Operating expenses:											
Marketing and sales	46,131	15.5	39,188	14.8	6,943	17.7	39,188	14.8	29,144	13.9	10,04
Research and development	22,388	7.5	18,350	6.9	4,038	22.0	18,350	6.9	16,607	7.9	1,743
General and administrative	36,651	12.3	29,716	11.3	6,935	23.3	29,716	11.3	22,122	10.6	7,594
Total operating expenses	105,170	35.3	87,254	33.0	17,916	20.5	87,254	33.0	67,873	32.4	19,38
Income from operations	61,767	20.7	67,149	25.5	(5,382)	(8.0)	67,149	25.5	60,528	28.9	6,621
Other income, net	2,454	0.8	712	0.2	1,742	*	712	0.2	3	0.0	709
Income before income taxes	64,221	21.5	67,861	25.7	(3,640)	(5.4)	67,861	25.7	60,531	28.9	7,330
Provision for income taxes	21,514	7.2	21,347	8.1	167	0.8	21,347	8.1	18,896	9.0	2,451
Net income	$42,707	14.3 %	$46,514	17.6 %	$(3,807)	-8.2 %	$46,514	17.6 %	$41,635	19.9 %	$4,879

* Percentage change not meaningful

Stock-based compensation expense included in the statements of comprehensive income data above is as follows:

(dollars in thousands)	Year Ended December 31, 2016	2015	2014
Stock options and grants	$6,177	$5,580	$4,386
Employee stock purchase plan	598	502	423
Total stock-based compensation expense	$6,775	$6,082	$4,809
Cost of revenue	$691	$513	$386
Operating expenses:			
Marketing and sales	977	1,074	927
Research and development	1,396	1,285	1,048
General and administrative	3,711	3,210	2,448
Total stock-based compensation expense	$6,775	$6,082	$4,809

Comparison of Years Ended December 31, 2016 and 2015

Revenue

Revenue by reportable segment and the related changes for 2016 and 2015 is summarized as follows:

	Year Ended December 31,							
	2016			2015			Change	
(dollars in thousands)	$	% of Total Revenue		$	% of Total Revenue		$	%
Revenue								
United States	$223,930	75.1	%	$208,018	78.7	%	$15,912	7.6 %
Europe	63,365	21.3		47,433	18.0		15,932	33.6
Japan	10,760	3.6		8,655	3.3		2,105	24.3
Total revenue	$298,055	100.0	%	$264,106	100.0	%	$33,949	12.9%

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Our revenue increased $34.0 million, or 12.9%, for 2016 compared with 2015. By reportable segment, revenue in the United States increased $15.9 million, or 7.6%, for 2016 compared with 2015. Revenue in Europe increased $15.9 million, or 33.6%, for 2016 compared with 2015, partially driven by the acquisition of Alphaform in the fourth quarter of 2015. Revenue in Japan increased $2.1 million, or 24.3%, for 2016 compared with 2015.

Our revenue growth in 2016 was the result of increased volume of the product developers and engineers we served. During 2016, we served 31,457 unique product developers and engineers, an increase of 15.5% over 2015. Average revenue per product developer or engineer decreased 6% during 2016 as compared to 2015.

Our revenue increases were primarily driven by increases in sales personnel and marketing activities. Our sales personnel focus on gaining new customer accounts and expanding the depth and breadth into existing customer accounts. Our marketing personnel focus on marketing activities that have proven to result in the greatest number of customer leads to support sales activity. International revenue decreased by $1.3 million in 2016 compared to 2015 as a result of foreign currency movements, primarily the strengthening of the United States dollar relative to the British pound.

Revenue by product line and the related changes for 2016 and 2015 is summarized as follows:

	Year Ended December 31,							
	2016		**2015**		**Change**			
(dollars in thousands)	**$**	**% of Total Revenue**	**$**	**% of Total Revenue**	**$**	**%**		
Revenue								
Injection Molding	$175,974	59.0	% $163,387	61.8	% $12,587	7.7	%	
CNC Machining	81,407	27.3	74,368	28.2	7,039	9.5		
3D Printing	37,847	12.7	25,132	9.5	12,715	50.6		
Other Product	2,827	1.0	1,219	0.5	1,608	131.9		
Total revenue	$298,055	100.0	% $264,106	100.0	% $33,949	12.9	%	

By product line, our revenue growth was driven by a 7.7% increase in Injection Molding revenue, a 9.5% increase in CNC Machining revenue and a 50.6% increase in 3D Printing revenue, in each case for 2016 compared with 2015, as well as a $1.6 million increase in Other Product revenue through our acquisition of Alphaform.

During the second quarter, we made the decision to discontinue offering two manufacturing processes within our Injection Molding product lines, Metal Injection Molding (MIM) and Magnesium Thixomolding (Thixo). In addition, in the second quarter, we decided to exit our non-core resin resale business, which was acquired from Alphaform in October 2015. Revenue from resin resale was included in Other Product revenue in 2015 and 2016. MIM, Thixo and resin resale in aggregate represented approximately 1.6% of revenue during 2016.

Cost of Revenue, Gross Profit and Gross Margin

Cost of Revenue. Cost of revenue increased $21.4 million, or 19.5%, for 2016 compared to 2015, which was greater than the rate of revenue increase of 12.9% for 2016 compared to 2015. The increase in cost of revenue resulted from the growth of the business, including via the Alphaform acquisition. Additional increase in the cost of revenue was due to raw material and production cost increases of $5.9 million to support increased sales volumes, an increase in direct labor headcount resulting in personnel and related cost increases of $10.4 million and equipment and facility-related cost increases of $5.1 million. Equipment and facility-related cost increases included $0.6 million of accelerated depreciation of leasehold assets resulting from our move to new facilities in the U.S. and Japan in the third quarter of 2016.

Gross Profit and Gross Margin. Gross profit increased from $154.4 million in 2015 to $166.9 million in 2016 primarily due to increasing revenue growth as noted above. Gross margin decreased from 58.5% of revenue in 2015 to 56.0% of revenue in 2016 primarily as a result of lower margins from the acquired Alphaform business, as well as increases in investments of additional manufacturing capacity, accelerated depreciation of leasehold assets and the impact of fluctuations in foreign currency exchange rates.

Income from Operations

Income from operations decreased $5.4 million, or 8.0%, for 2016 compared with 2015. By reportable segment, income from operations for the United States and Corporate Unallocated and Japan increased 3.3% and 20.2%, respectively, as a percentage of revenue for 2016 compared with 2015. Income from operations for Europe decreased 12.4% as a percentage of revenue for 2016 compared with 2015.

Operating Expenses, Other Income (Expense), Net and Provision for Income Taxes

Marketing and Sales. Marketing and sales expense increased $6.9 million, or 17.7%, for 2016 compared to 2015 due to an increase in headcount resulting in personnel and related cost increases of $6.2 million and marketing program cost increases of $0.7 million. The increase in marketing program costs is the result of our focus and concentration on funding those programs that have proven to be the most effective in growing our business.

Research and Development. Our research and development expense increased $4.0 million, or 22.0%, for 2016 compared to 2015 due to an increase in headcount resulting in personnel and related cost increases of $3.1 million, operating cost increases of $0.8 million and professional services cost increases of $0.1 million.

General and Administrative. Our general and administrative expense increased $6.9 million, or 23.3%, for 2016 compared to 2015 due to an increase in headcount resulting in personnel and related cost increases of $2.2 million, facility and administrative cost increases of $3.6 million, professional service cost increases of $0.6 million for outside legal and accounting services, and stock-based compensation cost increases of $0.5 million. The increase in administrative costs for 2016 includes accelerated depreciation and facilities-related charges of $0.8 million resulting from our move to new facilities in the U.S. and Japan in the third quarter of 2016.

Other Income, Net. We recognized other income, net of $2.5 million in 2016, an increase of $1.8 million compared to other income, net of $0.7 million for 2015. Other income, net included $1.4 million in foreign currency exchange gains for 2016 compared to $0.5 million in foreign currency exchange losses in 2015. The increase was primarily due to the amount of foreign-currency denominated cash balances abroad and movements in underlying exchange rates at the end of the period.

Provision for Income Taxes. Our income tax provision increased $0.2 million for 2016 compared to 2015 due to an increase of taxable income. Our effective tax rate increased to 33.4% in 2016 from 31.5% in 2015 due primarily to the mix of revenue earned in domestic and foreign tax jurisdictions and deductions for which we qualify in the current year.

Comparison of Years Ended December 31, 2015 and 2014

Revenue

Revenue by reportable segment and the related changes for 2015 and 2014 is summarized as follows:

	Year Ended December 31,							
	2015			2014			Change	
(dollars in thousands)	$	% of Total Revenue		$	% of Total Revenue		$	%
Revenue								
United States	$208,018	78.7	%	$165,117	78.8	%	$42,901	26.0%
Europe	47,433	18.0		37,491	17.9		9,942	26.5
Japan	8,655	3.3		6,975	3.3		1,680	24.1
Total revenue	$264,106	100.0	%	$209,583	100.0	%	$54,523	26.0%

Our revenue increased $54.5 million, or 26.0%, for 2015 compared with 2014, driven primarily by an increase in the product developers and engineers we served. By reportable segment, revenue in the United States increased $42.9 million, or 26.0%, for 2015 compared with 2014. Revenue in Europe increased $9.9 million, or 26.5%, for 2015 compared with 2014. Revenue in Japan increased $1.7 million, or 24.1%, for 2015 compared with 2014.

Our revenue growth in 2015 was the result of increased volume of the product developers and engineers we served. During 2015, we served 27,235 unique product developers and engineers, an increase of 26% over 2014. Average revenue per product developer or engineer remained consistent during 2015 as compared to 2014.

Our revenue increases were primarily driven by increases in sales personnel and marketing activities. Our sales personnel focus on gaining new customer accounts and expanding the depth and breadth into existing customer accounts. Our marketing personnel focus on marketing activities that have proven to result in the greatest number of customer leads to support sales activity. International revenue decreased by $7.5 million in 2015 compared to 2014 due to strengthening of the United States dollar relative to the British Pound and Japanese Yen, as well as the strengthening of the British Pound relative to the Euro. The effect of pricing changes on international revenue was immaterial for 2015 compared to 2014.

Revenue by product line and the related changes for 2015 and 2014 is summarized as follows:

	Year Ended December 31,							
	2015			**2014**			**Change**	
(dollars in thousands)	**$**	**% of Total Revenue**		**$**	**% of Total Revenue**		**$**	**%**
Revenue								
Injection Molding	$163,387	61.8	%	$140,282	66.9	%	$23,105	16.5 %
CNC Machining	74,368	28.2		59,914	28.6		14,454	24.1
3D Printing	25,132	9.5		9,387	4.5		15,745	167.7
Other Product	1,219	0.5		-	-		1,219	100.0
Total revenue	$264,106	100.0	%	$209,583	100.0	%	$54,523	26.0 %

By product line, our revenue growth was driven by a 16.5% increase in Injection Molding revenue and a 24.1% increase in CNC Machining revenue, in each case for 2015 compared with 2014, as well as $15.7 million increase in revenue from 3D Printing and $1.2 million in Other Product revenue through our acquisition of Alphaform.

Cost of Revenue, Gross Profit and Gross Margin

Cost of Revenue. Cost of revenue increased $28.5 million, or 35.1%, for 2015 compared to 2014, which was greater than the rate of revenue increase of 26.0% for 2015 compared to 2014. The increase in cost of revenue was due to raw material and production cost increases of $10.8 million to support increased sales volumes, equipment and facility-related cost increases of $3.1 million and an increase in direct labor headcount resulting in personnel and related cost increases of $14.6 million.

Gross Profit and Gross Margin. Gross profit increased from $128.4 million in 2014 to $154.4 million in 2015 primarily due to increasing revenue growth as noted above. Gross margin decreased from 61.3% of revenue in 2014 to 58.5% of revenue in 2015 primarily as a result of our 3D Printing product line having a lower gross margin than our CNC Machining and Injection Molding product lines, revenue earned through our acquisition of Alphaform having lower gross margins than our legacy operations, the cost of increased capacity, which has not been fully leveraged, and the impact of fluctuations in foreign currency exchange rates.

Income from Operations

Income from operations increased $6.6 million, or 10.9%, for 2015 compared with 2014. By reportable segment, income from operations for the United States increased 16.1% as a percentage of revenue for 2015 compared with 2014. Income from operations for Europe and Corporate Unallocated and Japan decreased 9.7% and 13.8%, respectively, as a percentage of revenue for 2015 compared with 2014.

Operating Expenses, Other Expense, Net and Provision for Income Taxes

Marketing and Sales. Marketing and sales expense increased $10.0 million, or 34.5%, for 2015 compared to 2014 due to an increase in headcount resulting in personnel and related cost increases of $8.2 million and marketing program cost increases of $1.8 million. The increase in marketing program costs is the result of our focus and concentration on funding those programs which have proven to be the most effective in growing our business.

Research and Development. Our research and development expense increased $1.7 million, or 10.5%, for 2015 compared to 2014 due to an increase in headcount resulting in personnel and related cost increases of $3.4 million and other operating cost increases of $0.2 million, which were partially offset by decreases in professional service costs of $1.9 million.

General and Administrative. Our general and administrative expense increased $7.6 million, or 34.3%, for 2015 compared to 2014 due to an increase in headcount resulting in personnel and related cost increases of $4.4 million, facility and administrative cost increases of $1.5 million, professional service cost increases of $0.7 million for outside legal and accounting services, stock-based compensation cost increases of $0.8 million and intangible amortization expenses of $0.2 million.

Other Income (Expense), Net. Other income, net increased $0.7 million for 2015 compared with 2014 due to $0.3 million gain on the bargain purchase of Alphaform, $0.2 million increase in interest income and $0.2 million in other non-operating activity.

Provision for Income Taxes. Our income tax provision increased $2.4 million for 2015 compared to 2014 due to an increase of taxable income. Our effective tax rate increased marginally to 31.5% in 2015 from 31.2% in 2014 due primarily to the mix of revenue earned in domestic and foreign tax jurisdictions and deductions for which we qualify in the current year.

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Selected Quarterly Results of Operations Data

The following tables set forth selected unaudited quarterly results of operations data for 2016 and 2015. This unaudited quarterly information has been prepared on the same basis as our annual audited consolidated financial statements appearing elsewhere in this Annual Report on Form 10-K and includes all adjustments, consisting only of normal recurring adjustments, that we consider necessary to present fairly the financial information for the fiscal quarters presented. The quarterly data should be read in conjunction with our selected financial data and consolidated financial statements and the related notes appearing elsewhere in this Annual Report on Form 10-K. Operating results for any quarter are not necessarily indicative of results for a full-year period, and the historical results presented below are not necessarily indicative of the results to be expected in any future period.

	Three Months Ended							
(in thousands, except share and per share amounts)	**Dec. 31, 2016**	**Sep. 30, 2016**	**Jun. 30, 2016**	**Mar. 31, 2016**	**Dec. 31, 2015**	**Sep. 30, 2015**	**Jun. 30, 2015**	**Mar. 2015**
	(unaudited)							
Consolidated Statements of Comprehensive Income Data:								
Revenue	$72,353	$78,173	$74,961	$72,568	$73,759	$67,842	$63,969	$58,5
Cost of revenue	32,041	33,448	32,715	32,914	32,485	27,517	26,419	23,2
Gross profit	40,312	44,725	42,246	39,654	41,274	40,325	37,550	35,2
Operating expenses:								
Marketing and sales	11,949	11,787	11,453	10,942	10,805	10,027	9,502	8,85
Research and development	5,278	5,976	5,816	5,318	4,879	4,760	4,397	4,31
General and administrative	8,254	10,020	10,126	8,251	9,033	8,134	6,304	6,24
Total operating expenses	25,481	27,783	27,395	24,511	24,717	22,921	20,203	19,4
Income from operations	14,831	16,942	14,851	15,143	16,557	17,404	17,347	15,8
Other income (expense), net	112	625	1,092	625	612	593	(36)	(457
Income before income taxes	14,943	17,567	15,943	15,768	17,169	17,997	17,311	15,3
Provision for income taxes	5,571	5,585	5,252	5,106	5,176	5,615	5,625	4,93
Net income	$9,372	$11,982	$10,691	$10,662	$11,993	$12,382	$11,686	$10,4

Net income per share:								
Basic	$0.35	$0.45	$0.41	$0.41	$0.46	$0.47	$0.45	$0.40
Diluted	$0.35	$0.45	$0.40	$0.40	$0.45	$0.47	$0.44	$0.40
Shares used to compute net income per share:								
Basic	26,457,302	26,416,041	26,368,001	26,222,148	26,164,340	26,083,405	25,921,111	25,8
Diluted	26,609,929	26,609,878	26,561,148	26,442,357	26,465,043	26,381,313	26,277,503	26,2

Liquidity and Capital Resources

Cash Flows

The following table summarizes our cash flows for the years ended December 31, 2016, 2015 and 2014:

	Year Ended December 31,		
(dollars in thousands)	**2016**	**2015**	**2014**
Net cash provided by operating activities	$74,967	$58,557	$57,210
Net cash used in investing activities	(60,755)	(63,594)	(63,499)
Net cash provided by financing activities	7,847	10,238	7,036
Effect of exchange rates on cash and cash equivalents	(917)	(877)	(457)
Net increase in cash and cash equivalents	$21,142	$4,324	$290

Sources of Liquidity

We finance our operations and capital expenditures through cash flow from operations. We had cash and cash equivalents of $68.8 million as of December 31, 2016, an increase of $21.1 million from December 31, 2015. The increase in our cash was primarily due to cash generated through operations and, to a lesser extent, proceeds from exercises of stock options and purchases through our employee stock purchase plan, which were partially offset by investing activity. We had cash and cash equivalents of $47.7 million as of December 31, 2015, an increase of $4.3 million from December 31, 2014. The increase in our cash was due primarily to cash generated through operations and exercises of stock options, which were partially reduced by investment activity. We had cash and cash equivalents of $43.3 million as of December 31, 2014, an increase of $0.3 million from December 31, 2013. The increase in our cash was due primarily to cash generated through operations and exercises of stock options, which were partially reduced by investment activity.

As of December 31, 2016, the amount of cash and cash equivalents held by foreign subsidiaries was $18.7 million. If these funds are needed for our domestic operations, we would be required to accrue and pay U.S. taxes to repatriate these funds. However, our intent is to permanently reinvest these funds outside the U.S. and our current plans do not demonstrate a need to repatriate them to fund our domestic operations. We believe that our existing cash and cash equivalents together with cash generated from operations will be sufficient to meet our working capital expenditure requirements for at least the next 12 months.

Cash Flows from Operating Activities

Cash flow from operating activities during 2016 primarily consisted of net income of $42.7 million, adjusted for certain non-cash items, including depreciation and amortization of $17.5 million, stock-based compensation expense of $6.8 million, deferred taxes of $2.8 million, loss on impairment of assets of $0.5 million and amortization of held-to-maturity securities of $1.2 million, which were partially offset by excess tax benefit from stock-based compensation expense of $2.5 million. The cash flow from operating activities during 2016 compared to 2015 increased $16.4 million due to changes in operating assets and liabilities of $14.0 million, increases in depreciation and amortization of $3.4 million driven by an increase in capital investments, stock-based compensation expense of $0.7 million driven by an increased level of equity grants to employees, loss on impairment of assets of $0.5 million driven by the decision to exit certain product lines, an increase in excess tax benefits of $3.0 million, $0.3 million of gain from the Alphaform acquisition in 2015 that did not recur and changes in operating assets and liabilities of $14.0 million driven by general growth of the business. These increases were partially offset by a decrease in net income of $3.8 million, a decrease in deferred taxes of $0.1 million, a decrease in amortization of held-to-maturity securities of $0.1 million, as well as other adjustments of $1.5 million primarily related to unrealized gains on the translation of foreign currency denominated cash.

Cash flow from operating activities during 2015 primarily consisted of net income of $46.5 million, adjusted for certain non-cash items, including depreciation and amortization of $14.1 million and stock-based compensation expense of $6.1 million, partially offset by excess tax benefit from stock-based compensation expense of $5.5 million. The cash flow from operating activities during 2015 compared to 2014 increased $1.3 million due to increases in net income of $4.9 million, depreciation and amortization of $3.0 million, deferred taxes of $4.7 million and stock-based compensation expense of $1.3 million, which were partially offset by a gain on acquisition of $0.3 million, an increase in excess tax benefit from stock-based compensation of $1.1 million, and decreases in amortization of held-to-maturity securities of $0.3 million and changes in operating assets and liabilities of $10.9 million.

Cash flow from operating activities during 2014 primarily consisted of net income of $41.6 million, adjusted for certain non-cash items, including depreciation and amortization of $11.1 million and stock-based compensation expense of $4.8 million, partially offset by excess tax benefit from stock-based compensation expense of $4.5 million. The cash flow from operating activities during 2014 compared to 2013 increased $8.8 million due to increases in net income of $6.4 million, depreciation and amortization of $3.5 million, stock-based compensation expense of $1.3 million and a decrease in excess tax benefit from stock-based compensation of $5.4 million, which were partially offset by decreases in deferred taxes of $2.3 million and changes in operating assets and liabilities of $5.5 million.

Cash Flows from Investing Activities

Cash used in investing activities was $60.8 million for the year ended December 31, 2016, consisting of $33.6 million for the purchase of property and equipment primarily to expand our production capacity, and $89.3 million for the purchase of marketable securities, which were partially offset by $62.1 million in proceeds from maturities and call redemption of marketable securities.

Cash used in investing activities was $63.6 million for the year ended December 31, 2015, consisting of $44.4 million for the purchase of property and equipment primarily to expand our production capacity, $5.0 million for the payments on business acquisitions and $66.4 million for the purchase of marketable securities, which were partially offset by $52.2 million in proceeds from maturities and call redemption of marketable securities.

Cash used in investing activities was $63.5 million for the year ended December 31, 2014, consisting of $43.5 million for the purchase of property and equipment primarily to expand our production capacity, $33.9 million for payments on business acquisitions and $60.2 million for the purchases of marketable securities, which were partially offset by $74.1 million in proceeds from maturities and call redemption of marketable securities.

Cash Flows from Financing Activities

Cash provided by financing activities was $7.8 million for the year ended December 31, 2016, consisting of excess tax benefit on stock-based compensation of $2.5 million and $5.7 million in proceeds from exercises of stock options, partially offset by $0.4 million for payments of acquisition-related contingent consideration.

Cash provided by financing activities was $10.2 million for the year ended December 31, 2015, consisting of excess tax benefit on stock-based compensation of $5.5 million and $6.3 million in proceeds from exercises of stock options, partially offset by $0.2 million for payments of debt and $1.4 million for payments of acquisition-related contingent consideration.

Cash provided by financing activities was $7.0 million for the year ended December 31, 2014, consisting of excess tax benefit on stock-based compensation of $4.5 million and $4.8 million in proceeds from exercises of stock options, partially offset by $1.1 million for payments of debt and $1.2 million for payments of acquisition-related contingent consideration.

Operating and Capital Expenditure Requirements

We believe, based on our current operating plan, that our cash balances and cash generated through operations and interest income will be sufficient to meet our anticipated cash requirements through at least the next 12 months. From time to time we may seek to sell equity or convertible debt securities or enter into credit facilities. The sale of equity and convertible debt securities may result in dilution to our shareholders. If we raise additional funds through the issuance of convertible debt securities or enter into credit facilities, these securities and debt holders could have rights senior to those of our common stock, and this debt could contain covenants that would restrict our operations. We may require additional capital beyond our currently forecasted amounts. Any such required additional capital may not be available on terms acceptable to us, or at all.

Our future capital requirements will depend on many factors, including the following:

- the revenue growth in Injection Molding, CNC Machining and 3D Printing product lines;
- costs of operations, including costs relating to expansion and growth;

- the emergence of competing or complementary technological developments;

- the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual product rights, or participating in litigation-related activities; and

- the acquisition of businesses, products and technologies, although we currently have no commitments or agreements relating to any of these types of transactions.

Our annual capital expenditures generally have varied between approximately 8% and 19% of annual revenue. We believe future growth capital expenditures, excluding any expenditures for buildings and maintenance capital we might purchase for our operations, are likely to vary between approximately 8% and 12% of annual revenue.

Contractual Obligations

As of December 31, 2016, our contractual obligations and the effect such obligations are expected to have on our liquidity and cash flows in future periods were as follows:

		Payment Due by Period			
(in thousands)	**Total**	**Less than 1 Year**	**1-3 Years**	**3-5 Years**	**More than 5 Years**
Operating leases	$13,851	$3,531	$4,905	$3,267	$2,148
Total	$13,851	$3,531	$4,905	$3,267	$2,148

The table above reflects only payment obligations that are fixed and determinable. Our commitments for operating leases relate to two of our United States manufacturing facilities: our European sales, customer service and technical support offices; three former Alphaform manufacturing and office facilities located in Germany and Finland; and our Japan facility.

Financing Arrangements

We have no financing arrangements as of December 31, 2016 or 2015.

Inflation

We believe that inflation and changing prices have not had a material effect on our financial condition during the three most recent fiscal years.

Off-Balance Sheet Arrangements

Since our inception, we have not engaged in any off-balance sheet arrangements, including the use of structured finance, special purpose entities or variable interest entities.

Critical Accounting Policies and Use of Estimates

The discussion and analysis of our financial condition and results of operations is based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates, judgments and assumptions that affect the reported amount of assets, liabilities, revenue, expenses and related disclosures. On an ongoing basis, we evaluate our estimates, including those related to revenue recognition, goodwill, other intangible assets, stock-based compensation, and income taxes. We base our estimates of the carrying value of certain assets and liabilities on historical experience and on various other assumptions that we believe to be reasonable under the circumstances. In many cases, we could reasonably have used different accounting policies and estimates. In some cases, changes in the accounting estimates are reasonably likely to occur from period to period. Management has discussed the development, selection and disclosure of these estimates with the audit committee of our board of directors. Our actual results may differ significantly from these estimates under different assumptions or conditions.

We believe the following critical accounting policies affect our more significant judgments used in the preparation of our consolidated financial statements. See the Notes to Consolidated Financial Statements included in Item 8. “Financial Statements and Supplementary Data” in this Annual Report on Form 10-K for additional information about these critical accounting policies, as well as a description of our other accounting policies.

Revenue Recognition

We recognize revenue in accordance with ASC 605, *Revenue Recognition*, which states that revenue is realized or realizable and earned when all of the following criteria are met: (1) persuasive evidence of an arrangement exists, (2) delivery has occurred or services have been rendered, (3) the price to the buyer is fixed or determinable, and (4) collectability is reasonably assured.

Revenue is recognized upon transfer of title and risk of loss, which is generally upon the shipment of parts in our Injection Molding, CNC Machining, 3D Printing and Other product lines.

Goodwill

We recognize goodwill in accordance with ASC 350, *Intangibles—Goodwill and Other*. Goodwill is the excess of cost of an acquired entity over the amounts assigned to assets acquired and liabilities assumed in a business combination. Goodwill is not amortized. Goodwill is tested for impairment annually in the fourth quarter of each year, and is tested for impairment between annual tests if an event occurs or circumstances change that would indicate the carrying amount may be impaired. An impairment charge for goodwill is recognized only when the estimated fair value of a reporting unit, including goodwill, is less than its carrying amount. As of December 31, 2016 no impairment charges for goodwill have been recognized.

Other Intangible Assets

We recognize other intangibles assets in accordance with ASC 350, *Intangibles—Goodwill and Other*. Other intangible assets include internally developed software, customer relationships and other intangible assets acquired from an independent party. Other intangible assets with a definite life are amortized over a period ranging from two to 10 years on a straight line basis. Other intangible assets with a definite life are tested for impairment whenever events or circumstances indicate that the carrying amount of an asset (asset group) may not be recoverable. An impairment loss is recognized when the carrying amount of an asset exceeds the estimated undiscounted cash flows generated by the asset. As of December 31, 2016 no impairment charges for intangible assets have been recognized.

Stock-Based Compensation

We determine our stock-based compensation in accordance with ASC 718, *Compensation—Stock Compensation* (ASC 718), which requires the measurement and recognition of compensation expense for all share-based payment awards made to employees and non-employee directors based on the grant date fair value of the award.

Determining the appropriate fair value model and calculating the fair value of stock option grants requires the input of subjective assumptions. We use the Black-Scholes option pricing model to value our stock option awards. Stock-based compensation expense is significant to our consolidated financial statements and is calculated using our best estimates, which involve inherent uncertainties and the application of management’s judgment. Significant estimates include our expected term, stock price volatility and forfeiture rates. If different estimates and assumptions had been used, our common stock valuations could be significantly different and related stock-based compensation expense may be materially impacted.

The Black-Scholes option pricing model requires inputs such as the risk-free interest rate, expected term, expected volatility and expected dividend yield. We base the risk-free interest rate that we use in the Black-Scholes option pricing model on zero coupon U.S. Treasury instruments with maturities similar to the expected term of the award being valued. The expected term represents the weighted average period that our stock options are expected to be outstanding. The expected term is based on the observed and expected time to post-vesting exercise of options by employees and non-employee directors and considers the impact of post-vesting award forfeitures. We estimated the volatility of our stock price based on the historic volatility of our common stock. We have never paid and do not anticipate paying any cash dividends in the foreseeable future and, therefore, we use an expected dividend yield of zero in the option pricing model. In order to properly attribute compensation expense, we are required to estimate pre-vesting forfeitures at the time of grant and revise those estimates in subsequent periods if actual forfeitures differ from those estimates. We use historical data to estimate pre-vesting forfeitures and record stock-based compensation expense only for those awards that are expected to vest. If our actual forfeiture rate is materially different from our estimate, stock-based compensation expense could be significantly different from what has been recorded.

The fair value of each new employee and non-employee director option awarded was estimated on the date of grant for the periods below using the Black-Scholes option pricing model with the following assumptions:

	Year Ended December 31,		
	2016	**2015**	**2014**
Risk-free interest rate	1.53 - 2.68%	1.69 - 1.77%	0.43 - 2.14%
Expected life (years)	6.50	5.50 - 6.50	2.00 - 6.50
Expected volatility	44.38 - 45.93%	46.80 - 47.23%	47.29 - 49.30%
Expected dividend yield	0%	0%	0%
Weighted average grant date fair value	$26.61	$32.42	$32.65

Our 2012 Employee Stock Purchase Plan (ESPP) allows eligible employees to purchase a variable number of shares of our common stock during each offering period at a discount through payroll deductions of up to 15% of their eligible compensation, subject to plan limitations. The ESPP provides for six-month offering periods with a single purchase period, and at the end of each offering period, employees are able to purchase shares at 85% of the lower of the fair market value of our common stock on the first trading day of the offering period or on the last trading day of the offering period. We determine the fair value stock-based compensation related to our ESPP in accordance with ASC 718 using the component measurement approach and the Black-Scholes standard option pricing model.

The fair value of each offering period was estimated using the Black-Scholes option pricing model with the following assumptions:

	Year ended December 31,		
	2016	**2015**	**2014**
Risk-free interest rate	0.56 - 0.59%	0.08 - 0.39%	0.01 - 0.11%
Expected life (months)	6.00	6.00	6.00
Expected volatility	39.51 - 49.13%	29.41 - 37.64%	37.64 - 39.80%
Expected dividend yield	0%	0%	0%

There are significant differences among option valuation models, and this may result in a lack of comparability with other companies that use different models, methods and assumptions. If factors change and we employ different assumptions in the application of ASC 718 in future periods, or if we decide to use a different valuation model, such as a lattice model, the stock-based compensation expense that we record in the future under ASC 718 may differ significantly from what we have recorded using the Black-Scholes option pricing model and could materially affect

our operating results.

We recognize stock-based compensation expense on a straight-line basis over the requisite service period. We recorded stock-based compensation expense of $6.8 million, $6.1 million and $4.8 million during the years ended December 31, 2016, 2015 and 2014, respectively. As of December 31, 2016, we had $5.3 million of unrecognized stock-based compensation costs related to unvested stock options, net of estimated forfeitures, that are expected to be recognized over a weighted average period of 3.0 years. We issued options to purchase 117,480, 110,335 and 116,050 shares of our common stock in 2016, 2015 and 2014, respectively.

In future periods, our stock-based compensation expense is expected to increase due to our existing unrecognized stock-based compensation and the issuance of additional stock-based awards to continue to attract and retain employees and non-employee directors.

Income Taxes

We account for income taxes in accordance with ASC 740, *Income Taxes* (ASC 740). Under this method, we determine tax assets and liabilities based upon the differences between the financial statement carrying amounts and the tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to affect taxable income. The tax consequences of most events recognized in the current year's financial statements are included in determining income taxes currently payable. However, because tax laws and financial accounting standards differ in their recognition and measurement of assets, liabilities and equity, revenues, expenses, gains and losses, differences arise between the amount of taxable income and pretax financial income for a year and between the tax basis of assets or liabilities and their reported amounts in the financial statements. Because we assume that the reported amounts of assets and liabilities will be recovered and settled, respectively, a difference between the tax basis of an asset or liability and its reported amount in the balance sheet will result in a taxable or a deductible amount in some future years when the related liabilities are settled or the reported amounts of the assets are recovered, giving rise to a deferred tax asset or liability. We establish a valuation allowance for any portion of our deferred tax assets that we believe will not be recognized.

ASC 740 also clarifies the accounting for uncertainty in income taxes recognized in an enterprise's financial statements by defining a criterion that an individual tax position must meet for any part of the benefit of that position to be recognized in an enterprise's financial statements. Additionally, ASC 740 provides guidance on measurement, de-recognition, classification, interest and penalties, accounting in interim periods, disclosure and transition. Including interest and penalties, we have established a liability for uncertain tax positions of $4.0 million as of December 31, 2016.

Recent Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board (FASB) issued Accounting Standard Update (ASU) No. 2014-09, *Revenue from Contracts with Customers*. This ASU is a comprehensive new revenue recognition model that requires a company to recognize revenue from the transfer of goods or services to customers in an amount that reflects the consideration that the entity expects to receive in exchange for those goods or services. The Company is required to adopt the new pronouncement using one of two retrospective application methods.

On July 9, 2015, the FASB voted to approve a deferral of the effective date of ASU 2014-09 by one year to December 15, 2017 for annual reporting periods beginning after that date. The Company expects to adopt the new revenue standard using the modified retrospective approach and expects to quantify and disclose the expected impact, if any, of adopting this amended guidance in the third quarter Form 10-Q. While the Company is still evaluating the impact of the amended guidance, it does not expect the impact to be material.

In February 2016, the FASB issued ASU 2016-02, *Leases*, which introduces the balance sheet recognition of lease assets and lease liabilities by lessees for those leases classified as operating leases under previous guidance. The guidance will be effective for annual reporting periods beginning after December 15, 2018 and interim periods within those fiscal years with early adoption permitted. The Company is evaluating the impact of the future adoption of this standard on its consolidated financial statements, as well as the timing of such adoption.

In March 2016, the FASB issued ASU 2016-09, *Employee Share-Based Payment Accounting*, which is intended to simplify several aspects of the accounting for employee share-based payment transactions, including the accounting for income taxes, forfeitures, statutory tax withholding requirements, and classification in the statement of cash flows. This guidance will be effective for annual reporting periods beginning after December 15, 2016 and interim periods within those fiscal years with early adoption permitted. The Company will adopt this standard on January 1, 2017. The Company expects the impact on its effective tax rate to be less than 0.2%.

In August 2016, the FASB issued ASU 2016-15, *Statement of Cash Flows*, which is intended to reduce diversity in how companies present and classify certain cash receipts and cash payments in the statement of cash flows. This guidance will be effective for annual reporting periods beginning after December 15, 2017 and interim periods within those fiscal years with early adoption permitted. The Company is evaluating the impact of the future adoption of this guidance on its consolidated financial statements as well as the timing of such adoption, but does not expect the impact to be material.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Quantitative and Qualitative Disclosure of Market Risks

Our exposure to market risk is confined to our cash and cash equivalent balances and investments. The primary goals of our investment policy are preservation of capital, fulfillment of liquidity needs and fiduciary control of cash and cash equivalent balances. We also seek to maximize income from our investments without assuming significant risk. To achieve our goals, we maintain a portfolio of debt securities with various maturities ranging from one to three years. Due to the nature of our investment portfolio, we are subject to interest rate risks, which we mitigate by holding our investments to maturity. In future periods, we will continue to evaluate our investment policy in order to continue our overall goals.

Foreign Currency Risk

As a result of our foreign operations, we have revenue, expenses, assets and liabilities that are denominated in foreign currencies. We generate revenue and incur production costs and operating expenses in British Pound, Euro and Japanese Yen.

Our operating results and cash flows are adversely impacted when the United States dollar appreciates relative to other foreign currencies. Additionally, our operating results and cash flows are adversely impacted when the British Pound appreciates relative to the Euro. As we expand internationally, our results of operations and cash flows will become increasingly subject to changes in foreign exchange rates.

We have not used forward contracts or currency borrowings to hedge our exposure to foreign currency risk. Foreign currency risk can be assessed by estimating the change in results of operations or financial position resulting from a hypothetical 10% adverse change in foreign exchange rates. We believe such a change would generally not have a material impact on our financial position, but could have a material impact on our results of operations. We recognized a foreign currency gain of $1.4 million for the year ended December 31, 2016 and foreign currency losses of $0.5 million and $0.4 million for the two years ended December 31, 2015 and 2014, respectively.

Item 8. Financial Statements and Supplementary Data

Proto Labs, Inc.

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Shareholders

Proto Labs, Inc.

We have audited the accompanying consolidated balance sheets of Proto Labs, Inc. as of December 31, 2016 and 2015, and the related consolidated statements of comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2016. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

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

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Proto Labs, Inc. at December 31, 2016 and 2015, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2016, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Proto Labs, Inc.’s internal control over financial reporting as of December 31, 2016, based on criteria established in *Internal Control-Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 22, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Minneapolis, Minnesota

February 22, 2017

Report of Independent Registered Public Accounting Firm

The Board of Directors and Shareholders

Proto Labs, Inc.

We have audited Proto Labs, Inc.'s internal control over financial reporting as of December 31, 2016, based on criteria established in *Internal Control-Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). Proto Labs, Inc.'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 Annual Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the company's internal control over financial reporting based on our audit.

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

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

Because of inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Proto Labs, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of December 31, 2016 and December 31, 2015, related consolidated statements of comprehensive income, shareholders' equity, and cash flows for the three years in the period ended December 31, 2016, and our report dated February 22, 2017, expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Minneapolis, Minnesota

February 22, 2017

Proto Labs, Inc. Consolidated Balance Sheets (In thousands, except share and per share amounts)

	December 31, 2016	2015
Assets		
Current assets		
Cash and cash equivalents	$68,795	$47,653
Short-term marketable securities	39,477	33,201
Accounts receivable, net of allowance for doubtful accounts of $442 and $330 as of December 31, 2016 and December 31, 2015, respectively	34,060	36,125
Inventory	9,310	9,771
Prepaid expenses and other current assets	5,697	5,224
Income taxes receivable	445	6,028
Total current assets	157,784	138,002
Property and equipment, net	139,474	125,475
Goodwill	28,916	28,916
Other intangible assets, net	2,655	3,337
Long-term marketable securities	84,479	64,789
Other long-term assets	933	517
Total assets	$414,241	$361,036
Liabilities and shareholders' equity		
Current liabilities		
Accounts payable	$11,322	$13,643
Accrued compensation	7,670	9,993
Accrued liabilities and other	4,435	2,626
Total current liabilities	23,427	26,262
Long-term deferred tax liabilities	7,003	4,240
Other long-term liabilities	3,978	2,889
Total liabilities	34,408	33,391
Shareholders' equity		
Preferred stock, $0.001 par value, authorized 10,000,000 shares; issued and outstanding 0 shares as of December 31, 2016 and December 31, 2015, respectively	-	-
Common stock, $0.001 par value, authorized 150,000,000 shares; issued and outstanding 26,504,868 and 26,200,718 shares as of December 31, 2016 and December 31, 2015,	26	26

respectively		
Additional paid-in capital	213,857	198,835
Retained earnings	176,703	133,996
Accumulated other comprehensive loss	(10,753)	(5,212)
Total shareholders' equity	379,833	327,645
Total liabilities and shareholders' equity	$414,241	$361,036

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

**Proto Labs, Inc.
Consolidated
Statements of
Comprehensive
Income
(In thousands,
except share
and per share
amounts)**

	Year Ended December 31,		
	2016	**2015**	**2014**
Statements of Operations:			
Revenue	$298,055	$264,106	$209,583
Cost of revenue	131,118	109,703	81,182
Gross profit	166,937	154,403	128,401
Operating expenses			
Marketing and sales	46,131	39,188	29,144
Research and development	22,388	18,350	16,607
General and administrative	36,651	29,716	22,122
Total operating expenses	105,170	87,254	67,873
Income from operations	61,767	67,149	60,528
Other income, net	2,454	712	3
Income before income taxes	64,221	67,861	60,531
Provision for income taxes	21,514	21,347	18,896
Net income	$42,707	$46,514	$41,635
Net income per share:			
Basic	$1.62	$1.79	$1.62
Diluted	$1.61	$1.77	$1.60
Shares used to compute net income per share:			
Basic	26,365,173	26,005,858	25,692,699
Diluted	26,564,639	26,320,284	26,100,320
Other Comprehensive Loss, net of tax			
Foreign currency translation adjustments	$(5,541)	$(2,283)	$(1,838)
Comprehensive income	$37,166	$44,231	$39,797

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

Proto Labs, Inc. Consolidated Statements of Shareholders' Equity (In thousands, except share and per share amounts)

	Common Stock		Additional Paid-In	Retained	Accumulated Other Comprehensive	
	Shares	Amount	Capital	Earnings	Loss	Total
Balance at January 1, 2014	25,546,107	26	166,861	45,847	(1,091)	211,643
Common shares issued on exercise of options and other	292,003	-	4,820	-	-	4,820
Excess tax benefit from stock option exercises	-	-	4,470	-	-	4,470
Stock-based compensation expense	-	-	4,809	-	-	4,809
Net income	-	-	-	41,635	-	41,635
Other comprehensive income						
Foreign currency translation adjustment	-	-	-	-	(1,838)	(1,838)
Comprehensive income						39,797
Balance at December 31, 2014	25,838,110	$ 26	$ 180,960	$ 87,482	$ (2,929)	$ 265,539
Common shares issued on exercise of options and other	362,608	-	6,254	-	-	6,254
Excess tax benefit from stock option exercises	-	-	5,539	-	-	5,539
Stock-based compensation expense	-	-	6,082	-	-	6,082
Net income	-	-	-	46,514	-	46,514
Other comprehensive income						
Foreign currency translation adjustment	-	-	-	-	(2,283)	(2,283)
Comprehensive income						44,231
Balance at December 31, 2015	26,200,718	$ 26	$ 198,835	$ 133,996	$ (5,212)	$ 327,645
Common shares issued on exercise of options and other	304,150	-	5,715	-	-	5,715
Excess tax benefit from stock option exercises	-	-	2,532	-	-	2,532
Stock-based compensation expense	-	-	6,775	-	-	6,775
Net income	-	-	-	42,707	-	42,707
Other comprehensive income						
Foreign currency translation adjustment	-	-	-	-	(5,541)	(5,541)
Comprehensive income						37,166
Balance at December 31, 2016	26,504,868	$ 26	$ 213,857	$ 176,703	$ (10,753)	$ 379,833

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

Proto Labs, Inc. Consolidated Statements of Cash Flows (In thousands)

	Year Ended December 31,		
	2016	2015	2014
Operating activities			
Net income	$42,707	$46,514	$41,635
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	17,485	14,126	11,138
Stock-based compensation expense	6,775	6,082	4,809
Deferred taxes	2,780	2,837	(1,875)
Excess tax benefit from stock-based compensation	(2,532)	(5,539)	(4,470)
Loss on impairment of assets	455	-	-
Gain on acquisition	-	(344)	-
Amortization of held-to-maturity securities	1,173	1,234	1,517
Other	(1,541)		
Changes in operating assets and liabilities, net of acquisitions:			
Accounts receivable	900	(11,371)	(5,304)
Inventories	136	(2,097)	(896)
Prepaid expenses and other	(1,312)	(2,047)	107
Income taxes	8,207	(2,310)	9,373
Accounts payable	(1,116)	5,781	1,435
Accrued liabilities and other	850	5,691	(259)
Net cash provided by operating activities	74,967	58,557	57,210
Investing activities			
Purchases of property and equipment	(33,616)	(44,362)	(43,507)
Cash used for acquisitions, net of cash acquired	-	(5,032)	(33,864)
Purchases of marketable securities	(89,315)	(66,393)	(60,186)
Proceeds from maturities of marketable securities	62,176	52,193	74,058
Net cash used in investing activities	(60,755)	(63,594)	(63,499)
Financing activities			
Payments on debt	-	(152)	(1,054)
Acquisition-related contingent consideration	(400)	(1,400)	(1,200)
Proceeds from exercises of stock options and other	5,715	6,251	4,820
Excess tax benefit from stock-based compensation	2,532	5,539	4,470
Net cash provided by financing activities	7,847	10,238	7,036

Effect of exchange rate changes on cash and cash equivalents	(917)	(877)	(457)
Net increase in cash and cash equivalents	21,142	4,324	290
Cash and cash equivalents, beginning of period	47,653	43,329	43,039
Cash and cash equivalents, end of period	$68,795	$47,653	$43,329
Supplemental cash flow disclosure			
Cash paid for interest	$1	$5	$19
Cash paid for taxes	$9,802	$20,330	$11,549

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

Proto Labs, Inc.

Notes to Consolidated Financial Statements

Note 1 – Nature of Business

Organization and business

Proto Labs, Inc. and its subsidiaries (Proto Labs, the Company, we, us, or our) is an e-commerce driven digital manufacturer of quick-turn, on-demand 3D printed, computer numerical control (CNC) machined and injection-molded custom parts for prototyping and short-run production. The Company's customers are product developers and engineers throughout the world who require a faster and less expensive way to obtain low volumes of parts. The Company's proprietary technology eliminates most of the time-consuming and expensive skilled labor conventionally required to quote and manufacture parts in low volumes, and its customers conduct nearly all of their business with the Company over the Internet. The Company targets its product lines to the millions of product developers and engineers who use three-dimensional (3D) computer-aided design (CAD) software to design products across a diverse range of end-markets. The Company has established operations in the United States, Europe and Japan, which the Company believes are among the largest geographic markets where these product developers and engineers are located. The Company's primary manufacturing product lines currently include Injection Molding, CNC Machining and 3D Printing. Proto Labs, Inc. is located in Maple Plain, Minnesota. The Company's subsidiaries are:

Name	Location
PL-US International LLC	United States
Proto Labs Ltd.	United Kingdom
PL Euro Services Ltd.	United Kingdom
PL International UK LLP	United Kingdom
PL International Holding UK Ltd.	United Kingdom
PLJ Ltd.	United Kingdom
Proto Labs Distribution Ltd.	United Kingdom
PL DE Holding GmbH	Germany
Proto Labs GmbH	Germany
Proto Labs Eschenlohe GmbH	Germany
PL Finland Oy	Finland
Proto Labs AB	Sweden

Proto Labs, G.K.	Japan

Note 2 - Summary of Significant Accounting Policies

Principles of consolidation

The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries, as listed within organization and business above. All intercompany accounts and transactions have been eliminated in consolidation.

Comprehensive income

Components of comprehensive income include net income and foreign currency translation adjustments. Comprehensive income is disclosed in the accompanying consolidated statements of comprehensive income and consolidated statements of shareholders' equity.

Proto Labs, Inc.

Notes to Consolidated Financial Statements

Accounting estimates

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

Cash and cash equivalents

Cash and cash equivalents include cash and other investments, including marketable securities, with maturities of three months or less at the date of purchase. The Company maintains its cash in bank deposit accounts, which, at times, may exceed federally insured limits. The Company has not experienced any losses on such accounts.

Marketable securities

Marketable securities include held-to-maturity debt securities recorded at amortized cost. Management determines the appropriate classification of debt securities at the time of purchase and reevaluates such designation as of each balance sheet date. Debt securities are classified as held-to-maturity when the Company has the positive intent and ability to hold the securities to maturity. Held-to-maturity securities are stated at amortized cost, adjusted for amortization of premiums and accretion of discounts to maturity computed under the effective interest method. Such amortization is included in other income, net. Interest on securities classified as held to maturity is included in other income, net. The classification of marketable securities as current or non-current is dependent upon the security's maturity date. Securities with maturities of three months or less at the time of purchase are categorized as cash equivalents as described above. The Company reviews impairments associated with its marketable securities in accordance with the measurement guidance provided by Accounting Standards Codification (ASC) 320, *Investments – Debt and Equity Securities,* when determining the classification of impairment as "temporary" or "other-than-temporary." The factors used to differentiate between temporary and other-than-temporary include assessment of the quality of the security, credit ratings actions and management's intent to hold the security to maturity as well as other factors.

Accounts receivable and allowance for doubtful accounts

Accounts receivable are reported at the invoiced amount less an allowance for doubtful accounts. As of each balance sheet date, the Company evaluates its accounts receivable and establishes an allowance for doubtful accounts based on a combination of specific customer circumstances and credit conditions taking into account the history of write-offs and collections. A receivable is considered past due if payment has not been received within the period agreed upon in the invoice. Accounts receivable are written off after all collection efforts have been exhausted. Recoveries of trade receivables previously written off are recorded when received.

Inventory

Inventory consists primarily of raw materials, which are recorded at the lower of cost or market, using the average cost method, which approximates first-in, first-out (FIFO) cost. The Company periodically reviews its inventory for slow-moving, damaged and discontinued items and provides allowances to reduce such items identified to their recoverable amounts.

Property, equipment and leasehold improvements

Property, equipment and leasehold improvements are stated at cost. Major improvements that substantially extend an asset’s useful life are capitalized. Repairs, maintenance and minor improvements are charged to operations as incurred. Depreciation, including amortization of leasehold improvements and assets recorded under capital leases, is calculated using the straight-line method over the estimated useful lives of the individual assets and ranges from 3 to 39 years. Manufacturing equipment is depreciated over 3 to 15 years, office furniture and equipment are depreciated over 3 to 7 years, computer hardware and software are depreciated over 3 to 5 years, building costs are depreciated over 39 years, leasehold improvements are depreciated over the estimated lives of the related assets or the life of the lease, whichever is shorter, and building and land improvements are depreciated over 10 to 39 years. Assets not in service are not depreciated until the asset is put into use.

Proto Labs, Inc.

Notes to Consolidated Financial Statements

In August 2015, the Company adjusted the useful lives of its primary production equipment based on experience and condition of current equipment. This change in accounting estimate was accounted for prospectively, and therefore had no effect on property and equipment, net as previously reported. This change was not material.

Goodwill

The Company recognizes goodwill in accordance with ASC 350, *Intangibles—Goodwill and Other*. Goodwill is the excess of cost of an acquired entity over the amounts assigned to assets acquired and liabilities assumed in a business combination. Goodwill is not amortized. Goodwill is tested for impairment annually in the fourth quarter of each year, and is tested for impairment between annual tests if an event occurs or circumstances change that would indicate the carrying amount may be impaired. An impairment charge for goodwill is recognized only when the estimated fair value of a reporting unit, including goodwill, is less than its carrying amount.

During the fourth quarter of 2016, the Company changed the date of the annual impairment test from December 31 to October 1. The change was made to more closely align the impairment testing date with the Company's forecasting process. The annual impairment test was performed as of December 31, 2015 and was performed as of October 1, 2016. This change in method of applying an accounting principal was not material.

Other Intangible Assets

Other intangible assets include internally developed software, customer relationships and other intangible assets acquired from an independent party. Other intangible assets with a definite life are amortized over a period ranging from two to 10 years on a straight line basis. Other intangible assets with a definite life are tested for impairment whenever events or circumstances indicate that the carrying amount of an asset (asset group) may not be recoverable. An impairment loss is recognized when the carrying amount of an asset exceeds the estimated undiscounted cash flows generated by the asset. The amount of the impairment loss recorded is calculated by the excess of the asset's carrying value over its fair value.

Accounting for long-lived assets

The Company periodically reviews the carrying amount of its property, equipment and leasehold improvements to determine if circumstances exist indicating an impairment or if depreciation periods should be modified. If facts or circumstances support the possibility of impairment, the Company will prepare a projection of the undiscounted future cash flows of the specific assets to determine if the assets are recoverable. If impairment exists based on these projections, an adjustment will be made to reduce the carrying amount of the specific assets to fair value.

Revenue recognition

The Company recognizes revenue when it is realized or realizable and earned when all of the following criteria are met: persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the price to the buyer is fixed or determinable and collectability is reasonably assured. Revenue is recognized upon transfer of title and risk of loss, which is generally upon the shipment of parts in our Injection Molding, CNC Machining and 3D Printing product lines. Freight billed to customers is included in revenues, and all freight expenses paid by the Company are included in cost of revenue.

Proto Labs, Inc.

Notes to Consolidated Financial Statements

Income taxes

The Company accounts for income taxes in accordance with ASC 740, *Income Taxes* (ASC 740). Under this method, the Company determines tax assets and liabilities based upon the differences between the financial statement carrying amounts and the tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to affect taxable income. The tax consequences of most events recognized in the financial statements are included in determining income taxes currently payable. However, because tax laws and financial accounting standards differ in their recognition and measurement of assets, liabilities and equity, revenues, expenses, gains and losses, differences arise between the amount of taxable income and pretax financial income for a year and between the tax basis of assets or liabilities and their reported amounts in the financial statements. Because the Company assumes that the reported amounts of assets and liabilities will be recovered and settled, respectively, a difference between the tax basis of an asset or liability and its reported amount in the balance sheet will result in a taxable or a deductible amount in some future years when the related liabilities are settled or the reported amounts of the assets are recovered, giving rise to a deferred tax asset or liability. The Company establishes a valuation allowance for any portion of its deferred tax assets that the Company believes will not be recognized.

ASC 740 also clarifies the accounting for uncertainty in income taxes recognized in an enterprise's financial statements by requiring that individual tax positions are recorded only when they meet a more-likely-than-not criterion. Additionally, ASC 740 provides guidance on measurement, de-recognition, classification, interest and penalties, accounting in interim periods, disclosure and transition.

Stock-based compensation

The Company accounts for stock-based compensation in accordance with ASC 718, *Compensation—Stock Compensation* (ASC 718). Under the fair value recognition provisions of ASC 718, the Company measures stock-based compensation cost at the grant date fair value and recognizes the compensation expense over the requisite service period, which is the vesting period, using a straight-line attribution method. The amount of stock-based compensation expense recognized during a period is based on the portion of the awards that are ultimately expected to vest. The Company estimates pre-vesting award forfeitures at the time of grant by analyzing historical data and revises those estimates in subsequent periods if actual forfeitures differ from those estimates. Ultimately, the total expense recognized over the vesting period will only be for those awards that vest. The Company's awards are not eligible to vest early in the event of retirement, however, the awards vest early in the event of a change in control.

In determining the compensation cost of the options granted, the fair value of options granted has been estimated on the date of grant using the Black-Scholes option-pricing model.

Advertising costs

Advertising is expensed as incurred and was approximately $10.5 million, $10.0 million and $8.5 million for the years ended December 31, 2016, 2015 and 2014, respectively.

Research and development

Research and development expenses consist primarily of personnel and outside service costs related to the development of new processes and product lines, enhancement of existing product lines, quality assurance and testing. The Company follows ASC 350-40, *Internal-Use Software*, in accounting for internally developed software. As of December 31, 2016, 2015 and 2014, all internal use software projects were in the post-implementation/operation stage and therefore, no software development costs were capitalized. Research and development costs were approximately $22.4 million, $18.4 million and $16.6 million for the years ended December 31, 2016, 2015 and 2014, respectively.

Foreign currency translation/transactions

The Company translated the balance sheets of its foreign subsidiaries at period-end exchange rates and the income statement at the average exchange rates in effect throughout the period. The Company has recorded the translation adjustment as a separate component of consolidated shareholders' equity. Foreign currency transaction gains and losses are recognized in the consolidated statements of comprehensive income.

Proto Labs, Inc.

Notes to Consolidated Financial Statements

Recent accounting pronouncements

In May 2014, the Financial Accounting Standards Board (FASB) issued Accounting Standard Update (ASU) No. 2014-09, *Revenue from Contracts with Customers*. This ASU is a comprehensive new revenue recognition model that requires a company to recognize revenue from the transfer of goods or services to customers in an amount that reflects the consideration that the entity expects to receive in exchange for those goods or services. The Company is required to adopt the new pronouncement using one of two retrospective application methods.

On July 9, 2015, the FASB voted to approve a deferral of the effective date of ASU 2014-09 by one year to December 15, 2017 for annual reporting periods beginning after that date. The Company expects to adopt the new revenue standard using the modified retrospective approach and expects to quantify and disclose the expected impact, if any, of adopting this amended guidance in the third quarter Form 10-Q. While the Company is still evaluating the impact of the amended guidance, it does not expect the impact to be material.

In February 2016, the FASB issued ASU 2016-02, *Leases*, which introduces the balance sheet recognition of lease assets and lease liabilities by lessees for those leases classified as operating leases under previous guidance. The guidance will be effective for annual reporting periods beginning after December 15, 2018 and interim periods within those fiscal years with early adoption permitted. The Company is evaluating the impact of the future adoption of this standard on its consolidated financial statements, as well as the timing of such adoption.

In March 2016, the FASB issued ASU 2016-09, *Employee Share-Based Payment Accounting*, which is intended to simplify several aspects of the accounting for employee share-based payment transactions, including the accounting for income taxes, forfeitures, statutory tax withholding requirements, and classification in the statement of cash flows. This guidance will be effective for annual reporting periods beginning after December 15, 2016 and interim periods within those fiscal years with early adoption permitted. The Company will adopt this standard on January 1, 2017. The Company does not expect the impact to be material.

In August 2016, the FASB issued ASU 2016-15, *Statement of Cash Flows*, which is intended to reduce diversity in how companies present and classify certain cash receipts and cash payments in the statement of cash flows. This guidance will be effective for annual reporting periods beginning after December 15, 2017 and interim periods within those fiscal years with early adoption permitted. The Company is evaluating the impact of the future adoption of this guidance on its consolidated financial statements as well as the timing of such adoption, but does not expect the

impact to be material.

Note 3 – Net Income Per Common Share

Basic net income per share is computed based on the weighted average number of common shares outstanding. Diluted net income per share is computed based on the weighted average number of common shares outstanding, increased by the number of additional shares that would have been outstanding had the potentially dilutive common shares been issued and reduced by the number of shares the Company could have repurchased from the proceeds from issuance of the potentially dilutive shares. Potentially dilutive shares of common stock include stock options and other stock-based awards granted under stock-based compensation plans and shares committed to be purchased under the employee stock purchase plan.

Proto Labs, Inc.

Notes to Consolidated Financial Statements

The following table presents the calculation of net income per basic and diluted share attributable to common shareholders:

	Year Ended December 31,		
(in thousands, except share and per share amounts)	**2016**	**2015**	**2014**
Net Income	$42,707	$46,514	$41,635
Basic - weighted-average shares outstanding:	26,365,173	26,005,858	25,692,699
Effect of dilutive securities:			
Employee stock options and other	199,466	314,426	407,621
Diluted - weighted-average shares outstanding:	26,564,639	26,320,284	26,100,320
Net income per share attributable to common shareholders:			
Basic	$1.62	$1.79	$1.62
Diluted	$1.61	$1.77	$1.60

Note 4 – Business Combinations

On October 1, 2015, the Company acquired certain assets, including shares of select subsidiaries, of Alphaform AG (Alphaform) through insolvency proceedings administered through the Insolvency Court of Munich, Germany. Included in the acquisition were select assets of Alphaform AG and Alphaform Claho GmbH and shares of Alphaform RPI Oy and Alphaform Ltd., for $5.0 million net cash consideration, which was funded with cash available in the United States and Europe. As of December 2016, the operations of Alphaform have been integrated into the operations of the Company.

Alphaform was a leading service bureau headquartered in Feldkirchen (Munich), Germany and also had locations in Eschenlohe, Germany; Rusko, Finland and Reading, UK. Alphaform produces high-quality parts using stereolithography (SL), selective laser sintering (SLS) and direct metal laser sintering (DMLS) technologies as well as injection molding capabilities and other production processes. The revenue associated with these processes is reported

under the 3D Printing, Injection Molding and Other product lines. In the second quarter of 2016, the Company made the decision to exit the resin resale business.

The results of Alphaform since the date of acquisition and pro forma disclosures of the consolidated results of the Company with the full year effects of Alphaform have not been separately presented since the impact to the Company's results of operations was not material.

Proto Labs, Inc.

Notes to Consolidated Financial Statements

The acquisition was accounted for under the acquisition method of accounting in accordance with ASC 805. Because Alphaform was insolvent, the fair value of the assets purchased and liabilities assumed exceeded the fair value of consideration paid, which resulted in a bargain purchase gain of $0.3 million. The bargain purchase gain was recorded in Other Income, Net in the Consolidated Statement of Comprehensive Income for the year ended December 31, 2015. The final allocation of the purchase price to assets acquired and liabilities assumed is as follows:

(in thousands)	
Assets acquired:	
Current assets	$2,766
Other long-term assets	3,876
Total assets acquired	6,642
Liabilities assumed:	
Current liabilities	1,266
Total liabilities assumed	1,266
Net assets acquired	$5,376
Cash paid	$5,570
Cash acquired	(538)
Total purchase consideration	$5,032
Gain recognized on bargain purchase	$344

On April 23, 2014, the Company acquired 100% of the outstanding shares of FineLine Prototyping, Inc. (FineLine) for $33.9 million net cash consideration, which was funded with cash available in the United States and the sale of $15.5 million of held-to-maturity securities. The shares of FineLine acquired through the Stock Purchase Agreement (the Agreement) were purchased in a private transaction exempt from registration under the Securities Act of 1933 and the operations of FineLine have been integrated into the operations of the Company. Under the terms of the Agreement, the Company was obligated to make additional cash payments totaling up to $3.0 million, contingent upon both the achievement of 2014 revenue goals and certain milestones relating to the integration of FineLine’s operations with the Company. As of December 31, 2016, the Company had made payments of $3.0 million related to the attainment of milestones and as of December 31, 2016 the Company had no remaining contingent consideration.

FineLine was based in Raleigh, North Carolina and was a leading producer of parts using additive manufacturing technologies, often times referred to as 3D printing. FineLine produced high-quality parts using stereolithography (SL), selective laser sintering (SLS) and direct metal laser sintering (DMLS) technologies to customers in a wide variety of industries, including medical, aerospace, computer/electronics, consumer products and industrial machinery, among others.

Consistent with the provisions of ASC 805, *Business Combinations* (ASC 805), the Company accrued the contingent payment on the date of acquisition after determining its fair value of $3.0 million in arriving at $36.9 million of total consideration, net of cash acquired. The fair value of the contingent consideration was determined by using Level 3 inputs based on the present value of various payout scenarios, weighted on the basis of probability. The contingent payment continues to be remeasured to fair value at each reporting period with changes in fair value reflected in the Consolidated Statements of Comprehensive Income.

The fair value of the consideration paid for this acquisition was allocated to the assets purchased and liabilities assumed based on their estimated fair values as of the acquisition date, with any excess recorded as goodwill. The goodwill associated with the acquisition is deductible for tax purposes and represents the strategic and growth opportunities from strengthening the Company’s portfolio of rapid prototyping product offerings. The addition of additive manufacturing expands Proto Labs’ products to address a wider spectrum of needs for the product developer and engineer. From concept models, to form and fit testing, to functional testing and short-run production, the acquisition of FineLine allows the Company to offer a broader range of quick-turn, on-demand custom parts with speed, reliability and consistency.

Proto Labs, Inc.

Notes to Consolidated Financial Statements

The results of FineLine since the date of acquisition and pro forma disclosures of the consolidated results of the Company with the full year effects of FineLine have not been separately presented since the impact to the Company's results of operations was not material.

The FineLine acquisition was accounted for under the acquisition method of accounting in accordance with ASC 805. The final allocation of the purchase price to assets acquired and liabilities assumed is as follows:

(in thousands)	
Assets acquired:	
Current assets	$1,248
Intangible assets	4,580
Goodwill	28,916
Other long-term assets	3,849
Total assets acquired	38,593
Liabilities assumed:	
Current liabilities	1,729
Total liabilities assumed	1,729
Net assets acquired	36,864
Cash paid	34,468
Cash acquired	(604)
Net cash consideration	33,864
Contingent consideration	3,000
Total purchase consideration	$36,864

Note 5 – Goodwill and Other Intangible Assets

The changes in the carrying amount of goodwill for the years ended December 31, 2016 and 2015 were as follows:

(in thousands)	Dec. 31, 2014	Goodwill acquired during 2015	2015 Other	Dec. 31, 2015	Goodwill acquired during 2016	2016 Other	Dec. 31, 2016
United States	$28,916	$ -	$ -	$28,916	$ -	$(4,869)	$24,047
Europe	-	-	-	-	-	4,239	4,239
Other	-	-	-	-	-	630	630
Total goodwill	$28,916	$ -	$ -	$28,916	$ -	$-	$28,916

As described in Note 17 – Segment Reporting, effective in the fourth quarter of 2016, the Company changed its reportable segments to be based upon geographic regions, which also resulted in the revision of reporting units. The Company has three reporting units and applied the relative fair value method to allocate goodwill to each of the reporting units. During the fourth quarter of 2016, the Company completed its annual assessment of any potential goodwill impairment for reporting units impacted by this new structure and determined that no impairment existed.

Proto Labs, Inc.

Notes to Consolidated Financial Statements

Intangible assets other than goodwill for the years ended December 31, 2016 and 2015 were as follows:

	Year Ended December 31, 2016			Year Ended December 31, 2015				
(in thousands)	Gross	Accumulated Amortization	Net	Gross	Accumulated Amortization	Net	Useful Life (in years)	Weighted Average Useful Life Remaining (in years)
Intangible Assets with finite lives:								
Marketing assets	$930	$ (248)	$682	$930	$ (155)	$775	10.0	7.3
Non-compete agreement	190	(190)	-	190	(158)	$32	2.0	0
Trade secrets	250	(133)	117	250	(83)	$167	5.0	2.3
Internally developed software	680	(604)	76	680	(378)	$302	3.0	0.3
Customer relationships	2,530	(750)	1,780	2,530	(469)	$2,061	9.0	6.3
Total intangible assets	$4,580	$ (1,925)	$2,655	$4,580	$ (1,243)	$3,337		

Amortization expense for intangible assets was $0.7 million for each of the years ended December 31, 2016 and 2015, respectively, and $0.5 million for the year ended December 31, 2014.

Estimated aggregated amortization expense based on the current carrying value of the amortizable intangible assets is as follows:

(in thousands)	Estimated Amortization Expense
2017	$ 500
2018	424
2019	391

2020	374
2021	374
Thereafter	592
Total estimated amortization expense	$ 2,655

Proto Labs, Inc.

Notes to Consolidated Financial Statements

Note 6 – Fair Value Measurements

ASC 820, *Fair Value Measuremen*t (ASC 820), defines fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. ASC 820 also establishes a fair value hierarchy which requires classification based on observable and unobservable inputs when measuring fair value. There are three levels of inputs that may be used to measure fair value:

Level 1—Quoted prices in active markets for identical assets or liabilities.

Level 2—Observable inputs other than Level 1 prices such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

The Company’s cash equivalents measured at fair value as of December 31, 2016 and 2015, respectively, consist of money market mutual funds. The Company determines the fair value of these financial assets using Level I inputs.

The following tables summarizes financial assets as of December 31, 2016 and 2015 measured at fair value on a recurring basis:

(in thousands)	December 31, 2016			December 31, 2015		
	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3

Financial Assets:						
Cash and cash equivalents						
Money market mutual funds	$11,771	$ -	$ -	$11,896	$ -	$ -
Total	$11,771	$ -	$ -	$11,896	$ -	$ -

Proto Labs, Inc.

Notes to Consolidated Financial Statements

Note 7 – Marketable Securities

The Company invests in short-term and long-term agency, municipal, corporate, commercial paper and other debt securities. The securities are categorized as held-to-maturity and are recorded at amortized cost. Categorization as held-to-maturity is based on the Company's ability and intent to hold these securities to maturity. Information regarding the Company's short-term and long-term marketable securities as of December 31, 2016 and 2015 is as follows:

(in thousands)	December 31, 2016			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
U.S. government agency securities	$31,706	$ 1	$ (141)	$31,566
Corporate debt securities	38,490	2	(147)	38,345
U.S. municipal securities	46,578	1	(187)	46,392
Certificates of deposit/time deposits	7,182	12	(22)	7,172
Total marketable securities	$123,956	$ 16	$ (497)	$123,475

(in thousands)	December 31, 2015			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
U.S. government agency securities	$26,784	$ 2	$ (99)	$26,687
Corporate debt securities	28,133	-	(114)	28,019
Commercial paper	1,497	-	(2)	1,495
U.S. municipal securities	35,667	8	(56)	35,619
Certificates of deposit/time deposits	5,909	2	(11)	5,900
Total marketable securities	$97,990	$ 12	$ (282)	$97,720

Fair values for the corporate debt securities are primarily determined based on quoted market prices (Level 1). Fair values for the U.S. municipal securities, U.S. government agency securities and certificates of deposit are primarily determined using dealer quotes or quoted market prices for similar securities (Level 2).

The Company tests for other than temporary losses on a quarterly basis and has considered the unrealized losses indicated above to be temporary in nature. The investment policy adopted by the Company dictates that only investments in quality, highly rated debt securities are permitted. Those unrealized losses displayed above are the result of macroeconomic factors and are indicative of neither the quality of the underlying security nor the issuer's ability to pay its debt. The Company intends, and has the ability, to hold the investments to maturity and recover the full principal.

Classification of marketable securities as current or non-current is based upon the security's maturity date as of the date of these financial statements.

Proto Labs, Inc.

Notes to Consolidated Financial Statements

The December 31, 2016 balance of held-to-maturity debt securities by contractual maturity is shown in the following table at amortized cost. Actual maturities may differ from contractual maturities because the issuers of the securities may have the right to prepay obligations without prepayment penalties.

	December 31, 2016
Due in one year or less	$ 39,477
Due after one year through five years	84,479
Total marketable securities	$ 123,956

Note 8 – Property and Equipment

Property and equipment consists of the following:

	December 31,	
(in thousands)	**2016**	**2015**
Land	$8,805	$8,301
Buildings and improvements	48,467	37,297
Machinery and equipment	114,729	103,205
Computer hardware and software	15,053	13,273
Leasehold improvements	6,688	3,404
Construction in progress	3,491	6,712
Total	197,233	172,192
Accumulated depreciation and amortization	(57,759)	(46,717)
Property and equipment, net	$139,474	$125,475

Depreciation expense for the years ended December 31, 2016, 2015 and 2014 was $16.8 million, $13.4 million and $10.6 million, respectively.

Note 9 – Inventory

Inventory consists primarily of raw materials, which are recorded at the lower of cost or market using the average-cost method, which approximates first-in, first-out (FIFO) cost. The Company periodically reviews its inventory for slow-moving, damaged and discontinued items and provides allowances to reduce such items identified to their recoverable amounts.

The Company's inventory consists of the following:

	December 31,	
(in thousands)	**2016**	**2015**
Raw materials	$8,057	$8,589
Work in process	1,531	1,529
Total inventory	9,588	10,118
Allowance for obsolescence	(278)	(347)
Inventory, net of allowance	$9,310	$9,771

Proto Labs, Inc.

Notes to Consolidated Financial Statements

Note 10 – Financing Obligations

The Company has no debt as of December 31, 2016 and 2015.

Note 11 – Employee Benefit Plans

The Company maintains a 401(k) retirement plan that covers employees in the United States. Under the plan, a full-time or regular part-time (over 20 hours/week) employee becomes a participant after completing three months of employment. Employees may elect to contribute up to 50 percent of regular gross pay, subject to federal law limits on the dollar amount that participants may contribute to the plan, each calendar year. The Company matches part of the employee contributions and may make a discretionary contribution to the plan. Total employer contributions were approximately $1.6 million, $1.2 million and $0.8 million for the years ended December 31, 2016, 2015 and 2014, respectively.

The Company also sponsors a defined contribution retirement plan that covers the employees in the United Kingdom. Total employer contributions were approximately $0.2 million, $0.2 million and $0.1 million for the years ended December 31, 2016, 2015 and 2014, respectively.

Note 12 – Stock-Based Compensation

The Company has two equity incentive plans: the 2000 Stock Option Plan (2000 Plan) and the 2012 Long-Term Incentive Plan (2012 Plan). Upon the adoption of the 2012 Plan on February 21, 2012, all shares that were reserved but not issued under the 2000 Plan were assumed by the 2012 Plan. No additional shares will be issued under the 2000 Plan. Under the 2012 Plan, the Company has the ability to grant stock options, stock appreciation rights (SARs), restricted stock, stock units, other stock-based awards and cash incentive awards. Awards under the 2012 Plan have a maximum term of ten years from the date of grant. The compensation committee of the board of directors may provide that the vesting or payment of any award will be subject to the attainment of specified performance measures in addition to the satisfaction of any continued service requirements, and the compensation committee will determine whether such measures have been achieved. The per share exercise price of stock options and SARs granted under the 2012 Plan generally may not be less than the fair market value of a share of our common stock on the date of the

grant.

The Company's 2012 Employee Stock Purchase Plan (ESPP) allows eligible employees to purchase a variable number of shares of the Company's common stock at a discount through payroll deductions of up to 15 percent of their eligible compensation, subject to plan limitations. The ESPP provides for six-month offering periods with a single purchase period, and at the end of each offering period, employees are able to purchase shares at 85 percent of the lower of the fair market value of the Company's common stock on the first trading day of the offering period or on the last trading day of the offering period. The Company determines the fair value stock-based compensation related to its ESPP in accordance with ASC 718 using the component measurement approach and the Black-Scholes standard option pricing model.

Employees purchased 40,279 and 31,905 shares of common stock under the ESPP at an average exercise price of $48.38 and $53.64 during 2016 and 2015, respectively. As of December 31, 2016, 1,285,314 shares remained available for future issuance under the ESPP.

The Company determines its stock-based compensation in accordance with ASC 718, which requires the measurement and recognition of compensation expense for all share-based payment awards made to employees and non-employee directors based on fair value.

Determining the appropriate fair value model and calculating the fair value of stock option grants requires the input of subjective assumptions. The Company uses the Black-Scholes option pricing model to value its stock option awards. Stock-based compensation expense is calculated using the Company's best estimates, which involve inherent uncertainties and the application of management's judgment. Significant estimates include its expected term, stock price volatility and forfeiture rates.

Proto Labs, Inc.

Notes to Consolidated Financial Statements

The expected term represents the weighted average period that the Company's stock options are expected to be outstanding. The expected term is based on the observed and expected time to post-vesting exercise of options by employees and non-employee directors and considers the impact of post-vesting award forfeitures. Prior to its IPO, the Company estimated the fair value of its common stock using the assistance of an independent third-party valuation specialist using the income and market approach. The Company estimated the volatility of its stock price based on the historic volatility of its common stock. The Company bases the risk-free interest rate that it uses in the Black-Scholes option pricing model on U.S. Treasury instruments with maturities similar to the expected term of the award being valued. The Company has never paid and does not anticipate paying, any cash dividends in the foreseeable future and, therefore, the Company uses an expected dividend yield of zero in the option pricing model. In order to properly attribute compensation expense, the Company is required to estimate pre-vesting forfeitures at the time of grant and revise those estimates in subsequent periods if actual forfeitures differ from those estimates. The Company uses historical data to estimate pre-vesting forfeitures and record stock-based compensation expense for those awards that are expected to vest. If the Company's actual forfeiture rate is materially different from its estimate, stock-based compensation expense could be significantly different from what has been recorded. The Company allocates stock-based compensation expense on a straight-line basis over the requisite service period.

The following table summarizes stock-based compensation expense for the years ended December 31, 2016, 2015 and 2014, respectively:

	Year Ended December 31,		
(in thousands)	**2016**	**2015**	**2014**
Stock options and other	$6,177	$5,580	$4,386
Employee stock purchase plan	598	502	423
Total stock-based compensation expense	$6,775	$6,082	$4,809
Cost of revenue	$691	$513	$386
Operating expenses:			
Marketing and sales	977	1,074	927
Research and development	1,396	1,285	1,048
General and administrative	3,711	3,210	2,448
Total stock-based compensation expense	$6,775	$6,082	$4,809
Income tax benefits	(2,042)	(1,859)	(1,524)
Total stock-based compensation expense, net of tax	$4,733	$4,223	$3,285

Proto Labs, Inc.

Notes to Consolidated Financial Statements

Stock Options

The following table provides the assumptions used in the Black-Scholes option pricing model for the years ended December 31, 2016, 2015 and 2014:

	Year Ended December 31,		
	2016	**2015**	**2014**
Risk-free interest rate	1.53% - 2.68%	1.69% - 1.77%	0.43% - 2.14%
Expected life (years)	6.50	5.50 - 6.50	2.00 - 6.50
Expected volatility	44.38% - 45.93%	46.80% - 47.23%	47.29% - 49.30%
Expected dividend yield	0%	0%	0%
Weighted average grant date fair value	$26.61	$32.42	$32.65

The following table summarizes stock option activity and the weighted average exercise price for the years ended December 31, 2016, 2015 and 2014:

	Stock Options	**Weighted-Average Exercise Price**
Options outstanding at January 1, 2014	1,143,250	$ 19.03
Granted	116,050	72.17
Exercised	(253,544)	13.77
Cancelled	(6,769)	26.23
Options outstanding at December 31, 2014	998,987	26.49
Granted	110,335	67.36
Exercised	(316,761)	14.36
Cancelled	(26,519)	51.72
Options outstanding at December 31, 2015	766,042	36.52
Granted	117,480	57.99

Exercised	(226,164)	16.65
Cancelled	(87,719)	61.41
Options outstanding at December 31, 2016	569,639	$ 45.00
Exercisable at December 31, 2016	320,973	$ 34.65

The outstanding options generally have a term of 10 years. For employees, options that have been granted become exercisable ratably over the vesting period, which is generally a five-year period, beginning on the first anniversary of the grant date, subject to the employee's continuing service to the Company. For directors, options generally become exercisable in full on the first anniversary of the grant date.

The total intrinsic value of options exercised during the years ended December 31, 2016, 2015 and 2014, was $11.1 million, $18.6 million and $16.3 million, respectively. The aggregate intrinsic value represents the cumulative difference between the fair market value of the underlying common stock and the option exercise prices.

For options outstanding at December 31, 2016, the weighted-average remaining contractual term was 6.0 years and the aggregate intrinsic value was $7.4 million. For options exercisable at December 31, 2016, the weighted-average remaining contractual term was 4.6 years and the aggregate intrinsic value was $6.8 million. Refer to the table below for additional information.

Proto Labs, Inc.

Notes to Consolidated Financial Statements

The following table summarizes information about stock options outstanding at December 31, 2016:

	Options Outstanding, Vested and Expected to Vest			Options Exercisable	
Range of Exercise Prices	Number Outstanding	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price ($)	Number Exercisable	Weighted Average Exercise Price ($)
$3.67 to $7.85	29,491	1.72	$ 4.98	29,491	$ 4.98
$7.86	74,100	3.87	7.86	74,100	7.86
$7.87 to $31.43	102,188	5.09	27.62	80,409	26.82
$31.44 to $47.15	56,428	6.08	44.05	24,936	41.95
$47.16 to $66.87	176,743	6.85	57.89	68,116	58.47
$66.88 to $78.59	130,689	7.62	71.64	43,921	73.01

The fair value of share-based payment transactions is recognized in the consolidated statements of comprehensive income. As of December 31, 2016, there was $5.3 million of total unrecognized compensation cost related to unvested stock options, which is expected to be recognized over a weighted average period of 3.0 years. The total fair value of options vested was $3.6 million, $2.8 million and $3.2 million for the years ended December 31, 2016, 2015 and 2014, respectively.

Restricted Stock

The 2012 Plan provides for the award of restricted stock or restricted stock units. Restricted stock awards are share settled and restrictions lapse ratably over the vesting period, which is generally a five-year period, beginning on the first anniversary of the grant date, subject to the employee’s continuing service to the Company. For directors, restrictions generally lapse in full on the first anniversary of the grant date.

The following table summarizes restricted stock activity for the years ended December 31, 2016 and 2015:

	Restricted Stock Awards	Weighted-Average Grant Date Fair Value Per Share
Restricted stock at January 1, 2014	-	$ -
Granted	77,647	69.18
Restrictions lapsed	(798)	62.68
Forfeited	(275)	62.68
Restricted stock at December 31, 2014	76,574	69.27
Granted	68,580	68.89
Restrictions lapsed	(16,863)	69.25
Forfeited	(3,898)	72.14
Restricted stock at December 31, 2015	124,393	68.97
Granted	161,555	59.37
Restrictions lapsed	(41,415)	67.78
Forfeited	(29,428)	63.23
Restricted stock at December 31, 2016	215,105	$ 62.78

As of December 31, 2016, there was $11.0 million of unrecognized compensation expense related to non-vested restricted stock, which is expected to be recognized over a weighted-average period of 3.7 years.

Proto Labs, Inc.

Notes to Consolidated Financial Statements

Employee Stock Purchase Plan

The following table presents the assumptions used to estimate the fair value of the ESPP during the years ended December 31, 2016, 2015 and 2014:

	Year ended December 31,		
	2016	**2015**	**2014**
Risk-free interest rate	0.56 - 0.59%	0.08 - 0.39%	0.01 - 0.11%
Expected life (months)	6.00	6.00	6.00
Expected volatility	39.51 - 49.13%	29.41 - 37.64%	37.64 - 39.80%
Expected dividend yield	0%	0%	0%

Note 13 – Commitments

The Company leases property from third parties. The Company leases two of its U.S. facilities, and the lease terms expire in July 2017 and May 2018. The Company also leases office space in France, Germany and Italy with terms expiring at various times from 2017 to 2023. The Company leases an office and manufacturing space in Japan, and the initial term expires in April 2023. The Company also leases office and manufacturing space for former Alphaform in Germany and Finland with terms expiring at various times from 2017 to 2022.

Future minimum commitments under non-cancelable leases at December 31, 2016, are as follows:

	Operating Leases
(in thousands)	
Years Ending December 31,	

2017	$ 3,531
2018	2,945
2019	1,960
2020	1,644
2021	1,623
After 2021	2,148
Total future minimum lease payments	$ 13,851

Rental expense was approximately $3.6 million, $1.4 million and $1.0 million for the years ended December 31, 2016, 2015 and 2014, respectively.

Proto Labs, Inc.

Notes to Consolidated Financial Statements

Note 14 – Accumulated Other Comprehensive Loss

Other comprehensive loss is comprised entirely of foreign currency translation adjustments. The following table presents the changes in accumulated other comprehensive loss balances for the years ending December 31, 2016, 2015 and 2014, respectively:

	Year Ended December 31,		
(in thousands)	**2016**	**2015**	**2014**
Foreign currency translation adjustments			
Balance at beginning of period	$(5,212)	$(2,929)	$(1,091)
Other comprehensive loss before reclassifications	(5,541)	(2,283)	(1,838)
Amounts reclassified from accumulated other comprehensive income (loss)	-	-	-
Net current-period other comprehensive loss	(5,541)	(2,283)	(1,838)
Balance at end of period	$(10,753)	$(5,212)	$(2,929)

Note 15 – Income Taxes

The Company is subject to income tax in multiple jurisdictions and the use of estimates is required to determine the provision for income taxes. For the years ended December 31, 2016, 2015 and 2014, the Company recorded an income tax provision of $21.5 million, $21.3 million and $18.9 million, respectively. The effective income tax rate for the years ended December 31, 2016, 2015 and 2014 was 33.4 percent, 31.5 percent and 31.2 percent, respectively.

The provision for income taxes is based on income before income taxes reported for financial statement purposes. The components of income before income taxes are as follows:

	Year Ended December 31,		
(in thousands)	**2016**	**2015**	**2014**
Domestic	$59,232	$59,421	$51,052

Foreign	4,989	8,440	9,479
Total	$64,221	$67,861	$60,531

Significant components of the provision for income taxes for the following periods are as follows:

	Year Ended December 31,		
(in thousands)	**2016**	**2015**	**2014**
Current:			
Federal	$15,119	$15,845	$17,413
State	1,091	1,074	1,185
Foreign	2,439	1,591	2,149
Deferred			
Federal	2,758	2,798	(1,821)
State	75	(38)	(17)
Foreign	(1,960)	294	130
Valuation Allowance	1,992	(217)	(143)
Total	$21,514	$21,347	$18,896

Proto Labs, Inc.

Notes to Consolidated Financial Statements

A reconciliation of the federal statutory income tax rate to the effective tax rate is as follows:

	Year Ended December 31,		
	2016	2015	2014
Federal tax statutory rate	35.0%	35.0%	35.0%
State tax (net of federal benefit)	0.6	0.5	0.5
Qualified subsidiary election	(0.8)	0.6	0.2
Valuation allowance against deferred tax assets	3.1	(0.3)	(0.2)
Research and development credit	(2.2)	(2.9)	(0.8)
Foreign rate differential	(2.8)	(1.8)	(2.1)
Tax reserves	1.4	1.5	0.4
Domestic manufacturing deduction	(1.8)	(1.4)	(2.1)
Miscellaneous	0.9	0.3	0.3
Total	33.4%	31.5%	31.2%

Significant components of deferred tax assets and liabilities are as follows:

(in thousands)	December 31, 2016	2015
Deferred tax assets:		
Accrued expenses	$857	$628
Warrants and stock options	3,226	2,828
Intangibles	612	499
Inventories	169	177
Other assets	983	856
Net operating loss	4,333	2,409
Less valuation allowance	(4,559)	(2,625)
Total deferred tax assets	5,621	4,772
Deferred tax liabilities:		
Depreciation	(10,860)	(7,945)
Goodwill	(1,764)	(1,067)

Total deferred tax liabilities	(12,624)	(9,012)
Net deferred tax liability	$(7,003)	$(4,240)

The Company has recorded no U.S. deferred taxes related to the undistributed earnings of its non-U.S. subsidiaries as of December 31, 2016. Such amounts are intended to be reinvested outside of the United States indefinitely. It is not practicable to estimate the amount of additional tax that might be payable on the foreign earnings. As of December 31, 2016, the Company had accumulated undistributed earnings in non-U.S. subsidiaries of $26.6 million.

Proto Labs, Inc.

Notes to Consolidated Financial Statements

As of December 31, 2016, the Company had estimated net operating loss carry forwards of $13.4 million for tax purposes. The net operating losses relate to operations in Japan and Germany. Japan losses can be carried forward for ten years but are limited to 80 percent of taxable income. Germany net operating losses may be carried forward without any time limitations but are limited to €1 million, plus 50% of taxable income exceeding €1 million. Japan net operating losses begin to expire at various dates between 2018 and 2026. The Company's Japan operations are taxed both by local authorities and in the U.S. Accordingly, a portion of Japan net operating losses has been recognized as a benefit in the U.S.

The Company establishes valuation allowances for deferred tax assets when, after consideration of all positive and negative evidence, it is considered more-likely-than-not that a portion of the deferred tax assets will not be realized. The Company's valuation allowances of $4.6 million and $2.6 million at December 31, 2016 and 2015, respectively, reduce the carrying value of deferred tax assets associated with certain net operating loss carry forwards and other assets with insufficient positive evidence for recognition. The increase in the valuation allowance is primarily attributable to fluctuations in foreign currency and the net operating losses incurred in Japan and Germany in 2016.

The Company files a U.S. federal income tax return and income tax returns in various states and foreign jurisdictions. With a few exceptions, the Company is no longer subject to U.S. federal, state, or foreign income tax examinations by tax authorities for years before 2012.

The Company has liabilities related to unrecognized tax benefits totaling $3.8 million and $2.8 million at December 31, 2016 and 2015, respectively, that if recognized would result in a reduction of the Company's effective tax rate. The liabilities are classified as other long-term liabilities in the accompanying consolidated balance sheets. The Company does not anticipate that total unrecognized tax benefits will materially change in the next twelve months. The Company recognizes interest and penalties related to income tax matters in income tax expense and reports the liability in current or long-term income taxes payable as appropriate. Interest and penalties were immaterial for each of the years ended December 31, 2016, 2015 and 2014.

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows:

	December 31,	
	2016	2015

Balance at beginning of period	$2,769	$1,295
Additions for tax positions of current year	1,077	919
Additions for tax positions of prior years	170	555
Decrease related to expiration of statutes of limitations	(220)	-
Balance at period end	$3,796	$2,769

Note 16 – Litigation

From time to time, the Company may be subject to various legal proceedings and claims that arise in the ordinary course of its business. Although the results of litigation and claims cannot be predicted with certainty, the Company does not believe it is a party to any litigation the outcome of which, if determined adversely, would individually or in the aggregate be reasonably expected to have a material adverse effect on its business.

Note 17 – Segment Reporting

The Company’s reportable segments are based on the internal reporting used by the Company’s CEO, who is the chief operating decision maker (CODM), to assess operating performance and make decisions about the allocation of resources. Beginning in the fourth quarter of 2016, the Company revised its reportable segments to be based upon geographic region, consisting of the United States and Europe. Prior to this change, the CODM managed based on consolidated operating information. Prior period segment reporting disclosures have been restated to present such information on a comparable basis. The Corporate Unallocated and Japan category includes non-reportable segments, as well as research and development and general and administrative costs that the Company does not allocate directly to its operating segments.

Proto Labs, Inc.

Notes to Consolidated Financial Statements

Revenue in the United States and Europe is derived from Injection Molding, CNC Machining and 3D Printing product lines. Revenue in Japan is derived from Injection Molding and CNC Machining product lines. Injection Molding revenue consists of sales of custom injection molds and injection-molded parts. CNC Machining revenue consists of sales of CNC-machined customer parts. 3D Printing revenue consists of sales of 3D-printed parts.

The accounting policies of the reportable segments are the same as those described in the Summary of Significant Accounting Policies note. Intercompany transactions primarily relate to intercontinental activity and have been eliminated and are excluded from the reported amounts. The difference between income from operations and pre-tax income relates to foreign currency-related gains and losses and interest income on cash balances and investments, which are not allocated to business segments.

Revenue and income from operations by reportable segment are as follows:

	Year Ended December 31,		
(in thousands)	**2016**	**2015**	**2014**
Revenue:			
United States	$223,930	$208,018	$165,117
Europe	63,365	47,433	37,491
Japan	10,760	8,655	6,975
Total revenue	$298,055	$264,106	$209,583

	Year Ended December 31,		
(in thousands)	**2016**	**2015**	**2014**
Income from Operations:			
United States	$89,308	$86,450	$74,445
Europe	11,657	13,304	14,734
Corporate Unallocated and Japan	(39,198)	(32,605)	(28,651)
Total income from operations	$61,767	$67,149	$60,528

Proto Labs, Inc.

Notes to Consolidated Financial Statements

Total long-lived assets, expenditures for additions to long-lived assets and depreciation and amortization expense are as follows:

(in thousands)	December 31, 2016	December 31, 2015	December 31, 2014
Long-lived assets:			
United States	$108,650	$98,633	$76,923
Europe	23,199	23,636	12,512
Japan	7,625	3,206	2,191
Total long-lived assets	$139,474	$125,475	$91,626

	Year Ended December 31,		
(in thousands)	2016	2015	2014
Expenditures for additions to long-lived assets:			
United States	$21,190	$32,560	$33,480
Europe	5,954	10,396	9,520
Japan	6,472	1,406	507
Total expenditures for additions to long-lived assets	$33,616	$44,362	$43,507

	Year Ended December 31,		
(in thousands)	2016	2015	2014
Depreciation and Amortization:			
United States	$12,533	$11,596	$9,233
Europe	3,386	2,132	1,530
Japan	1,566	398	375
Total depreciation and amortization	$17,485	$14,126	$11,138

The Company’s revenue is derived primarily from its Injection Molding, CNC Machining, and 3D Printing product lines. Total revenue by product lines is as follows:

(in thousands)	Year Ended December 31, 2016	2015	2014
Revenue:			
Injection Molding	$175,974	$163,387	$140,282
CNC Machining	81,407	74,368	59,914
3D Printing	37,847	25,132	9,387
Other Product	2,827	1,219	-
Total revenue	$298,055	$264,106	$209,583

Note 18 – Subsequent Events

On February 9, 2017, the Company announced that its board of directors had authorized the repurchase of shares of the Company's common stock from time to time on the open market or in privately negotiated purchases, at an aggregate purchase price of up to $50 million. The timing and amount of any share repurchases will be determined by the Company's management based on market conditions and other factors. The term of the program runs through December 31, 2021.

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

Not applicable.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934 (Exchange Act)) as of the end of the period covered by this report. Based upon that evaluation, the Chief Executive Officer and Chief Financial Officer have concluded that, as of the end of the period covered by this Annual Report on Form 10-K, our disclosure controls and procedures were effective and provided reasonable assurance that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported accurately and within the time frames specified in the SEC's rules and forms and accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Management's Annual Report on Internal Control Over Financial Reporting

The Company's management is responsible for establishing and maintaining an adequate system of internal control over financial reporting, as defined in the Exchange Act Rule 13a-15(f). Management conducted an assessment of the Company's internal control over financial reporting based on the framework established by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control – Integrated Framework* (2013 framework). Based on the assessment, management concluded that, as of December 31, 2016, the Company's internal control over financial reporting is effective. The Company's registered public accounting firm's attestation report on the Company's internal control over financial reporting is provided in Part II, Item 8 of this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting (as such term is defined in Rule 13a-15(f) under the Exchange Act) during the period covered by this report that have materially affected, or are reasonably

likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item with respect to Item 401 relating to executive officers is contained in Item 1 of this Annual Report on Form 10-K under the heading “Executive Officers of the Registrant” and with respect to other information relating to our directors will be set forth in our 2017 Proxy Statement under the caption “Proposal 1 — Election of Directors,” which will be filed no later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K, and is incorporated herein by reference.

The information required by this item under Item 405 of Regulation S-K is incorporated herein by reference to the section titled “Corporate Governance — Section 16(a) Beneficial Ownership Reporting Compliance” of our 2017 Proxy Statement, which will be filed no later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K. The information required by this item under Items 407 (c)(3), (d)(4) and (d)(5) of Regulation S-K is incorporated herein by reference to the section titled “Corporate Governance” of our 2015 Proxy Statement, which will be filed no later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

We have adopted a Code of Ethics and Business Conduct that applies to all of our directors, officers and employees, including our principal executive officer and principal financial officer. The Code of Ethics and Business Conduct is available on our website at www.protolabs.com under the Investors Relations section. We plan to post to our website at the address described above any future amendments or waivers of our Code of Ethics and Business Conduct.

Item 11. Executive Compensation

Information related to this item is incorporated herein by reference to the sections titled “Compensation Discussion and Analysis,” “Corporate Governance — Compensation Committee Interlocks and Insider Participation,” and “Compensation Committee Report” of our 2017 Proxy Statement, which will be filed no later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

Item 12. Security Ownership of Certain Beneficial Owners and Management

Information related to security ownership required by this item is incorporated herein by reference to the section titled "Security Ownership of Certain Beneficial Owners and Management" of our 2017 Proxy Statement, which will be filed no later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K. Information related to our equity compensation plans required by this item is incorporated herein by reference to the section titled "Compensation Discussion and Analysis – Information Regarding Equity-Based Compensation Plans" of our 2017 Proxy Statement, which will be filed no later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

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

Information required by this item is incorporated herein by reference to the sections titled "Corporate Governance — Certain Relationships and Related Party Transactions," and "Corporate Governance — Director Independence" of our 2017 Proxy Statement, which will be filed no later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

Item 14. Principal Accountant Fees and Services

Information required by this item is incorporated herein by reference to the section titled "Fees Paid to Independent Registered Public Accounting Firm" of our 2017 Proxy Statement, which will be filed no later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) The following documents are filed as part of this report:

1. Consolidated Financial Statements

See Index to Consolidated Financial Statement at Item 8 herein.

2. Financial Statement Schedules

Schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statement or notes herein.

3. Exhibits

See the Exhibit Index immediately following the signature page of this Annual Report on Form 10-K.

SIGNATURE

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.

Proto Labs, Inc.

Date: February 22, 2017

/s/ Victoria M. Holt

Victoria M. Holt
President and Chief Executive Officer

(Principal Executive Officer)

Date: February 22, 2017

/s/ John A. Way
John A. Way
Chief Financial Officer

(Principal Financial and Accounting Officer)

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 in the capacities and on the dates indicated.

Date: February 22, 2017

/s/ Victoria M. Holt

Victoria M. Holt
President and Chief Executive

Officer and Director

(Principal Executive Officer)

Date: February 22, 2017 /s/ John A. Way
John A Way
Chief Financial Officer

(Principal Financial and Accounting Officer)

Chairman of the Board of Directors:

Lawrence J. Lukis*

Directors:

Archie C. Black*

Rainer Gawlick*

John B. Goodman*

Brian K. Smith*

Sven A. Wehrwein*

*Victoria M. Holt, by signing her name hereto, does hereby sign this document on behalf of each of the above named officers and directors of the registrant pursuant to powers of attorney duly executed by such persons and filed as an exhibit hereto.

Date: February 22, 2017 /s/ Victoria M. Holt

Victoria M. Holt

President
and Chief
Executive
Officer

(Principal
Executive
Officer)

EXHIBIT INDEX

Exhibit Number	Description of Exhibit
3.1[(1)]	Third Amended and Restated Articles of Incorporation of Proto Labs, Inc.
3.2[(26)]	Articles of Amendment to Third Amended and Restated Articles of Incorporation of Proto Labs, Inc. dated May 20, 2015
3.3[(2)]	Second Amended and Restated By-Laws of Proto Labs, Inc., as amended through November 8, 2016
4.1[(3)]	Second Form of certificate representing common shares of Proto Labs, Inc., as amended through November 8, 2016
10.1[(4)#]	2012 Long-Term Incentive Plan, as amended as of August 5, 2015
10.2[(5)#]	Form of Incentive Stock Option Agreement under 2012 Long-Term Incentive Plan
10.3[(6)#]	Form of Non-Statutory Stock Option Agreement (Directors) under 2012 Long-Term Incentive Plan
10.4[(7)#]	Form of Non-Statutory Stock Option Agreement (U.S. Employees) under 2012 Long-Term Incentive Plan
10.5[(8)#]	Form of Non-Statutory Stock Option Agreement (U.K. Employees) under 2012 Long-Term Incentive Plan
10.6[(9)#]	Employee Stock Purchase Plan
10.7[(10)]	Stock Subscription Warrant issued to John B. Tumelty
10.8[(11)#]	2000 Stock Option Plan, as amended
10.9[(12)#]	Form of Incentive Stock Option Agreement under 2000 Stock Option Plan
10.10[(13)#]	Form of Non-Statutory Stock Option Agreement (Directors) under 2000 Stock Option Plan
10.11[(14)#]	Form of Non-Statutory Stock Option Agreement (U.S. Employees) under 2000 Stock Option Plan
10.12[(15)#]	Form of Non-Statutory Stock Option Agreement (U.S. Employees) under 2000 Stock Option Plan
10.13[(16)#]	Form of Non-Statutory Stock Option Agreement (U.K. Employees) under 2000 Stock Option Plan
10.14[(17)#]	Amended and Restated Credit Agreement, dated as of September 30, 2011, between Proto Labs, Inc. and Wells Fargo Bank, N.A.
10.15[(18)#]	Form of U.S. Severance Agreement
10.16[(19)#]	Form of UK Severance Agreement
10.17[(20)#]	Executive Employment Agreement, dated February 6, 2014, by and between Proto Labs, Inc. and Victoria M. Holt
10.18[(21)#]	Form of Restricted Stock Agreement under 2012 Long-Term Incentive Plan for the initial grant to Victoria M. Holt
10.19[(22)#]	Form of Restricted Stock Unit Agreement under 2012 Long-Term Incentive Plan (U.S. Employees)
10.20[(23)#]	Form of Restricted Stock Unit Agreement under 2012 Long-Term Incentive Plan (U.K. Employees)
10.21[(24)#]	Form of Restricted Stock Unit Agreement under 2012 Long-Term Incentive Plan (Directors)
10.22[(25)#]	Severance Agreement, dated December 18, 2014, by and between Proto Labs, Inc. and John A. Way
10.23[(27)#]	Form of Severance Agreement with Executive Officers
10.24[(28)#]	Form of Performance Stock Unit Agreement under 2012 Long-Term Incentive Plan
21.1	Subsidiaries of Proto Labs, Inc.
23.1	Consent of Ernst & Young LLP
24.1	Powers of Attorney
31.1	Certification of the Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act
31.2	Certification of the Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act
32.1*	Certification of the Chief Executive Officer and the Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act
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 Extension Presentation Linkbase Document

(1) Incorporated by reference to Exhibit 3.2 to the Company's Registration Statement on Form S-1/A (File No. 333-175745), filed with the Commission on February 13, 2012.

(2) Incorporated by reference to Exhibit 3.1 to the Company's Form 8-K, filed with the Commission on November 8, 2016.

(3) Incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-1/A (File No. 333-175745), filed with the Commission on February 13, 2012.

(4) Incorporated by reference to Exhibit 10.1 to the Company's Form 10-Q, filed with the Commission on November 3, 2015.

(5) Incorporated by reference to Exhibit 10.14 to the Company's Registration Statement on Form S-1/A (File No. 333-175745), filed with the Commission on February 13, 2012.

(6) Incorporated by reference to Exhibit 10.15 to the Company's Registration Statement on Form S-1/A (File No. 333-175745), filed with the Commission on February 13, 2012.

(7) Incorporated by reference to Exhibit 10.16 to the Company's Registration Statement on Form S-1/A (File No. 333-175745), filed with the Commission on February 13, 2012.

(8) Incorporated by reference to Exhibit 10.17 to the Company's Registration Statement on Form S-1/A (File No.

333-175745), filed with the Commission on February 13, 2012. Incorporated by reference to Exhibit 10.18 to the Company's Registration Statement on Form S-1/A (File No. 333-175745), filed with the Commission on February 13, 2012. Incorporated by reference to Exhibit 99.7 to the Company's Registration Statement on Form S-8 (File No. 333-179651), filed with the Commission on February 23, 2012. Incorporated by reference to Exhibit 10.7 to the Company's Registration Statement on Form S-1 (File No. 333-175745), filed with the Commission on July 25, 2011. Incorporated by reference to Exhibit 10.8 to the

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Company's Registration Statement on Form S-1 (File No. 333-175745), filed with the Commission on July 25, 2011.

(13) Incorporated by reference to Exhibit 10.9 to the Company's Registration Statement on Form S-1 (File No. 333-175745), filed with the Commission on July 25, 2011.

(14) Incorporated by reference to Exhibit 10.10 to the Company's Registration Statement on Form S-1 (File No. 333-175745), filed with the Commission on July 25, 2011.

(15) Incorporated by reference to Exhibit 10.11 to the Company's Registration Statement on Form S-1 (File No. 333-175745), filed with the Commission on July 25,

2011.

(16) Incorporated by reference to Exhibit 10.12 to the Company's Registration Statement on Form S-1 (File No. 333-175745), filed with the Commission on July 25, 2011.

(17) Incorporated by reference to Exhibit 10.19 to the Company's Registration Statement on Form S-1/A (File No. 333-175745), filed with the Commission on October 26, 2011.

(18) Incorporated by reference to Exhibit 99.1 to the Company's Form 8-K, filed with the Commission on March 1, 2013.

(19) Incorporated by reference to Exhibit 10.2 to the Company's Form 10-Q, filed with the Commission on May 8, 2013.

(20) Incorporated by reference

to Exhibit 10.1 to the Company's Form 8-K, filed with the Commission on February 6, 2014.

(21) Incorporated by reference to Exhibit 10.2 to the Company's Form 8-K, filed with the Commission on February 6, 2014.

(22) Incorporated by reference to Exhibit 10.1 to the Company's Form 8-K, filed with the Commission on February 12, 2014.

(23) Incorporated by reference to Exhibit 10.2 to the Company's Form 8-K, filed with the Commission on February 12, 2014.

(24) Incorporated by reference to Exhibit 99.6 to the Company's Registration Statement on Form S-8 (file No. 333-194272), filed with the Commission on March 3,

(25)	2014. Incorporated by reference to Exhibit 10.1 to the Company's Form 8-K, filed with the Commission on December 19, 2014.
(26)	Incorporated by reference to Exhibit 3.1 to the Company's Form 8-K, filed with the Commission on May 21, 2015.
(27)	Incorporated by reference to Exhibit 3.1 to the Company's Form 8-K, filed with the Commission on April 6, 2015.
(28)	Incorporated by reference to Exhibit 10.1 to the Company's Form 8-K, filed with the Commission on February 17, 2017.
#	Indicates management contract or compensatory plan or arrangement.
*	The certifications furnished in

Exhibit 32.1 hereto are deemed to accompany this Annual Report on Form 10-K and will not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended. Such certifications will not be deemed to be incorporated by reference into any filings under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, except to the extent that the registrant specifically incorporates it by reference.

** Users of this data are advised that, pursuant to Rule 406T of Regulation S-T, these interactive data files are deemed not filed or part of a registration statement or

prospectus for purposes of Sections 11 or 12 of the Securities Act of 1933 or Section 18 of the Securities Exchange Act of 1934 and otherwise are not subject to liability under these sections.