

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549  
**FORM 10-K**

(Mark One)

**ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**  
**For the fiscal year ended December 31, 2022**

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**  
(State or other jurisdiction of  
incorporation or organization)

**5540 Pioneer Creek Drive**  
**Maple Plain, Minnesota**  
(Address of principal executive offices)

**41-1939628**  
(I.R.S. Employer  
Identification No.)

**55359**  
(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	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, Par Value \$0.001 Per Share	PRLB	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 every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit such files). Yes  No

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

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

If an emerging growth company, indicate by check mark if the Registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the Registrant has filed a report on and attestation to its management’s assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements.

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b).

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, 2022 (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 \$1.3 billion.

As of February 6, 2023, there were 26,679,484 shares of the Registrant’s common stock outstanding.

#### DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant’s definitive proxy statement relating to its 2023 annual meeting of shareholders are incorporated by reference into Part III of this Annual Report on Form 10-K where indicated. Such proxy statement will be filed with the U.S. Securities and Exchange Commission within 120 days after the end of the fiscal year to which this report relates.

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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,” “expect,” “intend,” “plan,” “anticipate,” “believe,” “estimate,” “predict,” “project,” “potential,” “continue,” “ongoing” or the negative of these terms 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, breadth of manufacturing processes, 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;
- our ability to complete and successfully launch updates to our systems;
- 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, except as required by law, 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 used herein refer to the business and operations of Proto Labs, Inc. and its subsidiaries. We are one of the world’s largest and fastest digital manufacturers of custom prototypes and on-demand production parts. Our mission is to empower companies to bring new ideas to market by offering the fastest and most comprehensive digital manufacturing service in the world. Our automated quoting and manufacturing systems allow us to produce commercial-grade plastic, metal, and liquid silicone rubber parts in as fast as one day. We manufacture prototype and low volume production parts for companies 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, 3D printing and sheet metal fabrication to manufacture custom parts for our customers. We have manufactured over 450 million parts for customers. For most of our offerings, our proprietary technology eliminates most of the time-consuming and expensive skilled labor conventionally required to quote and manufacture parts. Using our technology, we have analyzed over 13.0 million unique part designs. 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. In addition, we serve procurement and supply chain professionals seeking to manufacture custom parts on-demand. We have established our operations in the United States, Europe and Japan. We believe the United States and Europe are two of the largest geographic markets where product developers and engineers are located. On May 27, 2022, the Company’s board of directors approved a plan for the closure of the Company’s manufacturing facility in Japan and announced an intention to cease operations in the region. Through the acquisition of Hubs (formerly 3D Hubs, Inc.) (Hubs) in 2021, we are able to provide our customers access to a global network of premium manufacturing partners who reside across North America, Europe and Asia, complementing our in-house manufacturing. We believe our use of advanced technology enables us to offer significant advantages at competitive prices to many customers and is the primary reason we have become a leading supplier of custom parts.

We believe prototype and low volume 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:

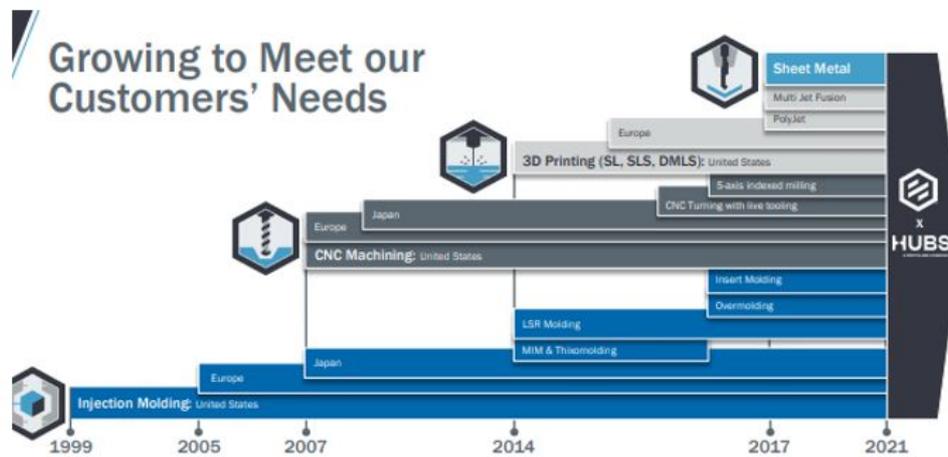
- they need a prototype to confirm the form, fit and function of one or more components of a product under development;
- they need an initial supply of parts to support pilot production for testing of a product;
- they need an initial supply of parts to support production while their tools for a high-volume production mold are prepared;
- they need to meet their customers’ variable demand for parts in a competitive timeframe;
- their product will only be produced in a limited quantity and/or is highly customized;
- they need to support end-of-life production in a cost-effective manner;
- they want to avoid minimum order quantities or costs related to storing excess inventory;
- they need access to diverse, cost competitive manufacturing capabilities and value the convenience of working with a single supplier to match parts to the best producer; or
- they need low- to mid-volumes of parts on an irregular schedule and prefer to order on-demand.

In each of these instances, we believe our solution provides product developers, engineers, and production buyers 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 primary manufacturing product lines currently include Injection Molding, CNC Machining, 3D Printing and Sheet Metal. 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 production buyers. Through the acquisition of Hubs, and as we complete the integration of our offerings, we will be providing our customers access to a global network of premium manufacturing partners which significantly expands the breadth and depth of our manufacturing capabilities. The acquisition of Hubs also allows us to offer customers a wider variety of lead times and pricing options, and an expanded envelope of parts (complexity, size, etc.).

Our increases in revenue can be attributed to expanding our customer base, broadening our parts envelope, and launching new manufacturing technologies. 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) and lathe manufacturing processes that expanded the breadth and scope of our injection molding and CNC machining product lines 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 of Alphaform AG (Alphaform) in 2015;
- rapid overmolding technology in 2016 and insert molding technology in 2017, both of which expanded the breadth of our manufacturing capabilities in our Injection Molding product line;
- PolyJet and Multi Jet Fusion (MJF) in 2017, which expanded the processes with which we produce 3D printed parts;
- injection molding commercial offerings tailored to on-demand manufacturing customers in 2017;
- sheet metal fabrication capability through our acquisition of RAPID Manufacturing Group, LLC (RAPID) in 2017;
- expanded CNC machining capabilities for larger and more complex parts through our acquisition of RAPID in 2017;
- Carbon Digital Light Synthesis<sup>(TM)</sup> (DLS) in 2019, which further expanded the processes with which we produce 3D printed parts;
- enhancements to our e-commerce customer interface and back-end operations software in Europe in the fourth quarter of 2020 and in the United States in the first quarter of 2021 designed to add value for our customers and support the growth of the business in the future;
- Hubs in 2021 to provide the platform to expand our offering for our customers by providing access to a global network of premium manufacturing partners; and
- Critical-to-Quality First Article Inspection technology for Injection Molded prototypes and low-volume production parts in 2021.



## Industry Overview

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.

Our digital model supports the transition from prototyping to production and enables us to serve product developers and engineers through prototyping and product development. Our digital model also enables us to serve production buyers that are focused on bringing their end product to market in a scalable, cost-effective manner. Our internal manufacturing operations, augmented by external manufacturing partners through our acquisition of Hubs in 2021, allow us to provide solutions for the many customer use cases from prototyping to low-volume production in a broad range of lead time and pricing options.

We believe there are three significant trends disrupting the manufacturing industry today:

- *SKU Proliferation* – The increase in the number of products launched has been dramatic across many sectors.
- *Shorter Product Life Cycles* – New products are launching faster and more frequently than ever before, partially driven by the internet of things and other connected device trends, resulting in shorter lives in the market.
- *Shift to E-commerce Sourcing* – The first two trends, SKU proliferation and shorter product life cycles, put pressure on traditional supply chains causing many to adopt digital solutions and begin to invest in digital supply ecosystems.

The impacts of these trends include increased volatility, reduced development time, increased variety to manage, higher pressure on development costs, shorter payback period in the market and reduced capital investment per product. Our digital thread makes us ideally suited to solve these challenges for many manufacturing companies by offering world-class speed, low upfront investment, no minimum order quantities, broad manufacturing capabilities, and flexibility to adapt to demand volatility.

## Our Process

Our digital thread, which is the combination of our proprietary software and the physical manufacturing process, has enabled us to reinvent manufacturing. Our digital thread ties together each aspect of the online ordering and manufacturing processes, including 3D CAD modeling and visualization tools, proprietary design for manufacturability analysis (DFM), computer aided manufacturing, the manufacturing equipment, and the shop floor data collection systems. Digital manufacturing, and the addition of the digital thread, results in automation that reduces manufacturing and labor costs and increases throughput, enabling us to differentiate ourselves as one of the world's fastest and most effective solutions for prototype and low volume production use cases.

Our technology allows us to manufacture a broad range of parts and products, across multiple industries and processes and enables us to serve a diverse set of customers. We currently serve all manufacturing industry verticals, with our top industries being medical and healthcare, computer electronics, industrial machinery and equipment, aerospace and automotive.

One example of our broad ability to serve our customers' use cases is a prominent medical company that turned to Protolabs and its advanced capabilities to accelerate the development of its new product. The medical team needed 12 injection molding tools for multiple components—all from a single manufacturing supplier. To address their needs, we paired our digital factory capabilities and global supply network together for accelerated manufacturing, advanced mold production capabilities, and quality parts. In the end, we produced nine quick-turn tools through our molding factory and three high-requirement tools via our supply network. Supply chain complexity was ultimately simplified by being a one-stop digital manufacturing resource.

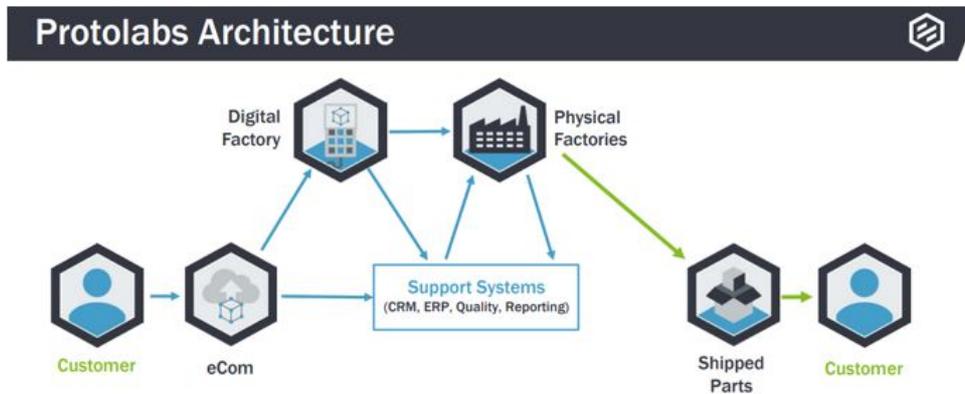
## Customer Order

The customer order process begins when the customer uploads one or more 3D CAD models representing the desired part geometry through our web-based customer interfaces. Our websites provide a straightforward means for our customers to submit 3D CAD part designs, including managing projects with multi-part orders, across multiple services and capabilities. Our proprietary software uses complex algorithms to analyze the 3D CAD geometry, analyze its DFM and support the creation of an interactive, web-based quotation containing pricing and manufacturability information. Using this technology, we have analyzed over 13.0 million unique part designs. The artificial intelligence and machine learning provided by each analysis allows us to continually improve our DFM technology. When the analysis is complete, a link to the quotation is then e-mailed to the customer, who can access the quotation, change a variety of order parameters and instantly see the effect on price before finalizing the order.

## Digital Manufacturing Process

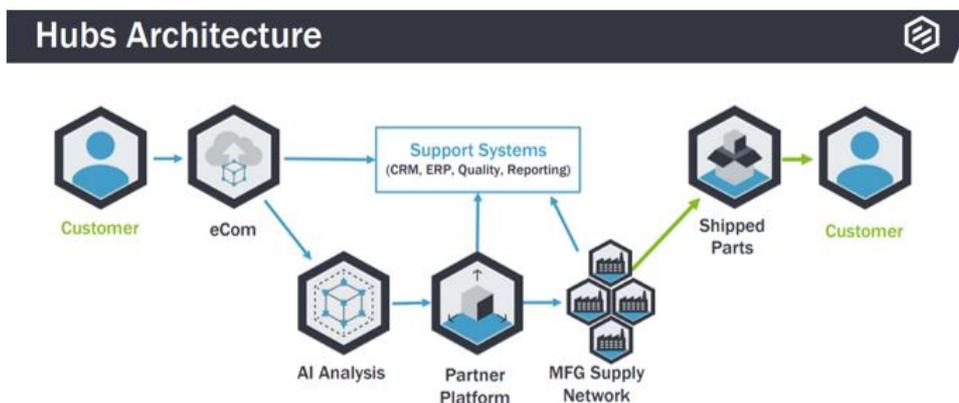
Our internal manufacturing operations produce parts in-house, while our outsourced manufacturing operations automatically route the parts for production by a global network of premium manufacturing partners.

## Internal Manufacturing Operations



For our internal manufacturing operations, once the design is ready and the customer places the order, digital instructions are sent to the production floor where manufacturing can begin immediately. Our proprietary software and business process automates the non-recurring manufacturing engineering in many of our services, removing time and cost from the manufacture of the custom part. With the integrated digital thread, data is shared through the continuum of the manufacturing process, from product conception and design upload to manufacturing, inspection and delivery. This ensures consistency, quality and a high degree of automation. As a result of this automation, we are able to ship parts to customers with industry leading speed at scale.

*Outsourced Manufacturing Operations to Network of Manufacturing Partners*



Once a customer order is confirmed, Hubs' proprietary software automatically routes the parts to the right manufacturing partner within minutes using a smart order routing system. Selected highlights of Hubs' proprietary software platform are:

- Majority of ordered parts are instantly quoted
- 98% of orders are manufacturable and the design for manufacturability software developed in-house
- Majority of sourced orders are paired automatically using smart order routing system
- Machine learning on data of over 12.0 million parts produced

**Shipping Parts to Customers**

Once parts are produced through our digital manufacturing process, either in-house or by one of our manufacturing partners, the parts are shipped to our customer. Parts are shipped 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 Product Lines**

Our suite of services falls under our four main product offerings — Injection Molding, CNC Machining, 3D Printing and Sheet Metal. These product lines offer many engineers and buyers 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, 3D Printing and Sheet Metal. In 2021, we augmented our internal manufacturing operations through our acquisition of Hubs to expand the envelope of custom parts we can provide to our customers through a network of premium manufacturing partners in each of our product lines.

### ***Injection Molding***

Our Injection Molding product line uses our 3D CAD-to-CNC machining technology for the automated design and manufacture of molds, which are then used to produce custom plastic and liquid silicone rubber injection-molded parts and over-molded and insert-molded injection-molded parts on commercially available equipment. Our Injection Molding product line works best for on-demand production, bridge tooling, pilot runs and functional prototyping. Our affordable molds and quick turnaround times help reduce design risk and limit overall production costs for product developers and engineers. 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. They do so to support pilot production for product testing, 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 requires limited annual quantity or because they need end-of-life production support. In 2017, we launched an on-demand manufacturing injection molding service. This service utilizes our existing processes, but is designed to fulfill the needs of customers with on-going production needs.

### ***CNC Machining***

Our CNC Machining product line uses commercially available CNC machines to offer milling and turning. CNC milling is a manufacturing process that cuts plastic and metal blocks into one or more custom parts based on the 3D CAD model uploaded by the customer. CNC turning is a subtractive manufacturing process that rotates a metal rod while a cutting tool is used to remove material and create final parts. Quick-turn CNC machining works best for prototyping, form and fit testing, jigs and fixtures and functional components for end-use applications.

### ***Industrial 3D Printing***

Our Industrial 3D Printing product line includes SL, SLS, DMLS, MJF, PolyJet, Carbon DLS and fused deposition modeling (FDM) 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. Industrial 3D Printing is best suited for functional prototypes, complex designs and end-use applications.

### ***Sheet Metal***

Our Sheet Metal product line includes quick-turn and e-commerce-enabled custom sheet metal parts, providing customers with prototype and low-volume production parts. The rapid prototype sheet metal process is most often used when form, fit and function are all a priority. Our manufacturing process uses customer 3D CAD models uploaded by the customer to fabricate rapid prototyping sheet metal or end-use production parts and assemblies.

### ***Our Growth Strategy***

We currently operate in a global custom contract manufacturing market which is a form of outsourcing where companies enter into an arrangement or formal agreement with another company or individual for the manufacture of complete parts, products, or components. Since our inception, we have focused on areas where we could automate the manufacturing process via our digital model. Our initial focus was on prototypes and simple parts and have added complexity over time. We have added product lines and expanded those product lines to meet the needs of our customers, which has ultimately driven our growth. Historically, we focused on speed, reliability and quality as key components of our differentiation, and customers used us for production where there was a good fit. We have positioned ourselves to avoid routine, low margin, high-volume commoditized manufacturing. We have evolved from serving primarily fast response prototypes to broader customer use cases including higher requirements, such as a tighter tolerance, broader ranges of lead times and price points and quality and process documentation to support production needs. We have further expanded our offering through the acquisition of Hubs to be able to serve our customers more holistically, augmenting our in-house manufacturing capabilities with a network of premium manufacturing partners to serve our customer needs that currently reside outside of our internal manufacturing capabilities. As we integrate with Hubs, our goal is to go from being one of the fastest and most reliable providers of custom parts to one of the most comprehensive in our four services. Combining our unprecedented in-house manufacturing with Hubs broad services offer and wide variety of price and lead time options expands our ability to provide value to our customers and differentiates us from competitors.

The principal elements of our growth strategy are to:

***Establish Platform (2022-2023)***

We serve nearly all of our customers over the internet using our e-commerce, digital model. The majority of customers upload CAD files through our secure e-commerce platform to receive a quote, and ultimately, place an order. The order is then processed through our digital model that is connected by our systems.

In the fourth quarter of 2020 in Europe and in the first quarter of 2021 in the United States, we launched Protolabs 2.0 (PL 2.0), a project designed to enhance the functionality and ease of use of our platform and expanded the capabilities of our customer-facing and back-end systems in order to further increase automation and meet the evolving needs of product developers and engineers worldwide. In 2022, we launched the first iteration of our integrated offer in Europe, which allows us to offer CNC manufacturing for eligible parts through the combination of our internal digital manufacturing and our digital network of manufacturing partners.

In 2021, our e-commerce platform was recognized by the World Economic Forum’s Global Lighthouse Network, recognizing our industry leading efforts to implement Fourth Industrial Revolution (4IR) technologies at our Plymouth, MN injection molding facility. The Lighthouse Network serves as a platform for manufacturers showing leadership in using 4IR technologies to share and learn best practices, support new partnerships and help other manufacturers deploy technology, adopt sustainable solutions, and transform their workforces. By implementing manufacturing automation and industrial internet of things technologies like this, we are able to unlock new levels of sustainability and efficiency for ourselves and our customers.

We believe product developers and engineers have come to expect advanced web-based tools and a fully integrated Internet platform from their vendors. In the near term, PL 2.0 provides our customers a more simplified quoting and more intuitive user experience. It requires fewer clicks and provides a better overall buying experience. Further, it allows expanded production capabilities for our customers. In the long-term, we expect PL 2.0 will allow us to launch new services and capabilities faster, help integrate acquisitions more efficiently, and continue to improve the buying experience by monitoring customer feedback and how customers use the system.



Our integration of the Hubs platform will position us to be able to expand our offer to provide our customers with the broadest solution for custom parts and we will continue to deliver innovation through historic and future R&D investment. With the integration of the Protolabs and Hubs architectures into a united platform, we can provide customers a complete offer with a single e-commerce storefront. This combined architecture will connect customers to the right manufacturing solution based on their needs. We will provide a range of price and lead time options providing customers with the most comprehensive custom parts solution in the world.

***Accelerate Growth (2022-2026)***

Our launch of PL 2.0 and acquisition of Hubs in 2021 provides the foundation for us to accelerate growth. The enhanced customer experience and expanded offering portfolio is expected to drive higher customer satisfaction, higher annual revenue per customer and improved customer retention. In addition, the new platform will allow us to continue to expand our parts offerings and serve a broader set of customer use cases. We serve a diverse set of customers from over a dozen industries. Accordingly, unlike most traditional manufacturers, we are not reliant on a single industry for growth. Our customers range from small start-ups to multi-national corporations. We continue to capitalize on the e-commerce revolution, as product developers and engineers move from sourcing parts traditionally to the e-commerce experience for sourcing custom parts.

We primarily focus on two types of customers: design engineers and production buyers. Our original customer, and still our largest type of customer, is the design engineer. Design engineers typically value, in order of importance, reliability, speed, quality, breadth of manufacturing capabilities, ease of use and price. Our first growth opportunity is to capture more wallet share by being a single provider for all their needs. The breadth and depth of our offering expanded with our acquisition of Hubs, allowing us to better serve our design engineers. Our enhanced offering is expected to lead to higher customer retention, greater customer satisfaction and increased revenue per customer as we serve more of their product needs.

Our second type of customer is the production buyer. Our ability to move quickly from prototyping to production enables us to serve the low volume, on-demand production needs of our customers. Shorter product life cycles, unpredictable demand, and the need to get products to market more quickly have increased the demand for our production offering. Production buyers typically value, in order of importance, quality, total cost of ownership, reliability, breadth of manufacturing capabilities, ease of use and speed. Transitioning with our customers to production has been a newer growth strategy for us and we historically captured only a portion of production business. Through our internal R&D road map and our acquisition of Hubs, we continue to expand our production capabilities to be able to serve more of our customers' needs, including offering a variety of price points and lead times, quality documentation and 3D printing production for certain use cases.

Finally, we anticipate our new complete and comprehensive offering will be attractive to new customers. We expect to continue to acquire new customers from traditional shops by communicating the advantages of digital manufacturing. The breadth of our offer will allow us to be a single supplier, or one-stop-shop, for all of our customer's needs.

#### ***Expand Profitability (2025 and beyond)***

The market in which we play, the tremendous value we deliver to our customers and our ability to expand our capabilities to serve our customers, has allowed us to grow from revenue of \$126.0 million in 2012, the year of our IPO, to revenue of \$488.4 million in 2022. As we establish our platform and accelerate growth, we are positioned to serve customers more holistically, which we expect will drive continued, long-term sustainable revenue growth, and ultimately, expanded profitability.

In recent years, we have focused on expanding our capabilities and investing in building our base infrastructure to support our long-term growth. Our integrated offer and service expansion will provide the platform for accelerating our growth. Going forward, we aim to leverage scale and innovation to expand profitability and capture enhanced operational efficiencies.

#### **Marketing**

As a customer-centric organization, we continue to evolve our go-to-market strategy. We believe we have three marketing opportunities to capitalize on: 1) expanding business with existing customers, including engineers and buyers, 2) engaging buyers who are new to us and are increasing e-commerce spend as manufacturing digitalizes, and 3) capturing engineers who are new to us and are turning to digital manufacturing solutions. Our global marketing effort generates leads 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 our campaigns 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 buyers 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 processes 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 within targeted market segments 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 customers 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 5% of our total revenue in 2022. In our history, we have served over 85% of the 2022 Fortune 500 companies in our target industries.

### **Competition**

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

- Other custom parts manufacturers. There are thousands of alternative manufacturing machine shops, injection molding suppliers, sheet metal fabricators, and 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.
- Brokers. There are an increasing number of digital brokers that provide product developers with a network of manufacturers, generally a subset of the other custom parts manufacturers described above, that can offer a diverse range of capabilities, capacity, competitive pricing and desired lead times to meet customer demand.
- Captive in-house product manufacturing. Many larger companies undertaking product development have established additive rapid prototyping (3D printing), CNC machining, injection molding or sheet metal capabilities internally to support prototyping or manufacturing requirements of their product developers and engineers.

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

- Quality: dimensional accuracy, surface finish, color and cleanliness;
- Speed: turnaround time for quotations and parts;
- Reliability: highly reliable delivery with predictable lead times;
- 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: competitive mold and part pricing, including total cost of ownership.

We believe that our digital end-to-end manufacturing capability positions us favorably and has enabled us to become a leader in our markets. We also believe that substantially all of our current direct competitors are smaller than us in terms of size of operations, revenue, number of customers and volume of parts sold, and generally lack our technological capabilities, or where developed at scale, have yet to operate profitably. 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 low volume, high mix 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.

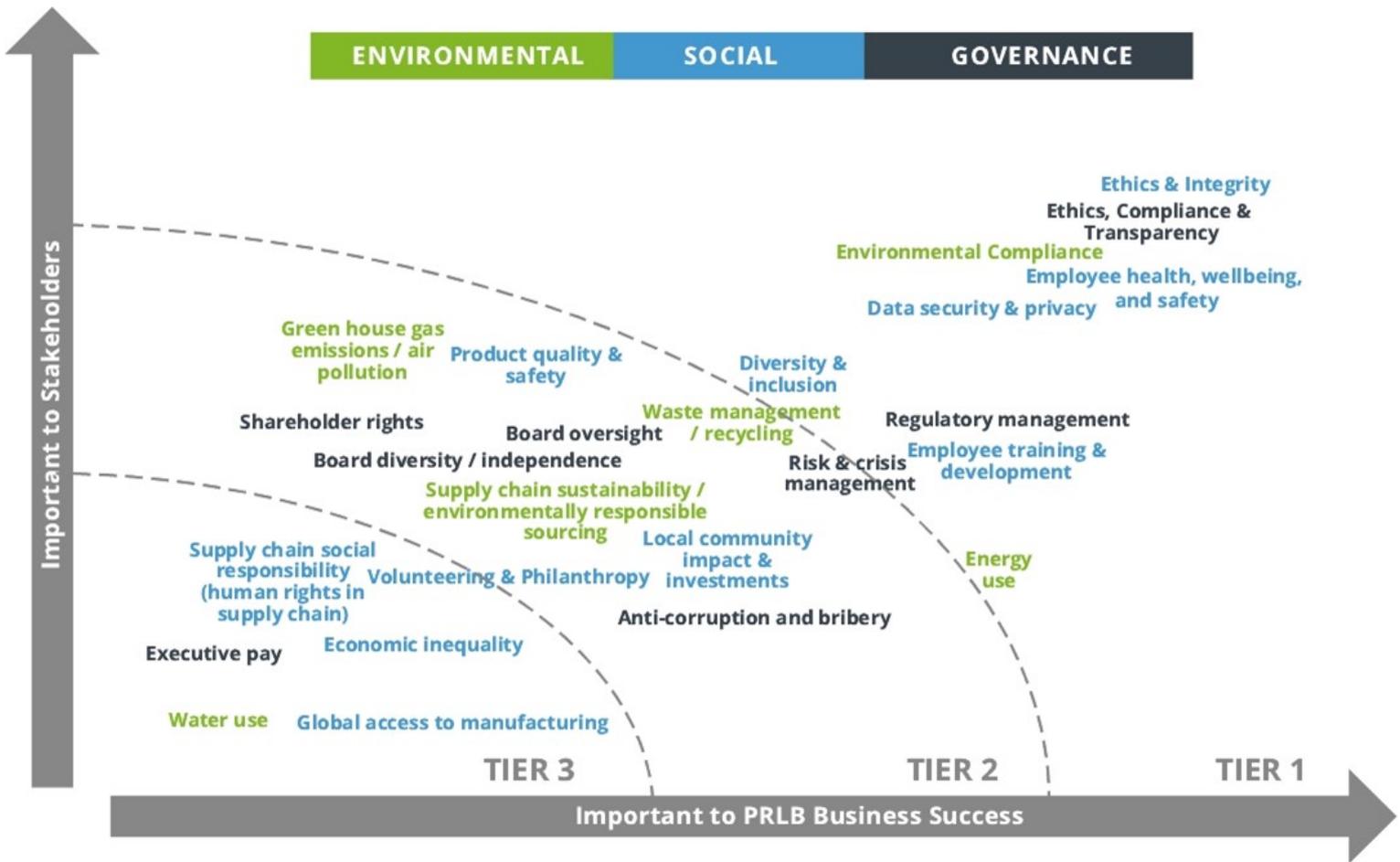
### **Corporate Responsibility and Sustainability**

Our corporate responsibility and sustainability practices are built on a foundation of shared fundamental values of teamwork, trust and achievement, and help us to deliver strong financial results that create value for our Company and our shareholders in a way that respects our communities and the environments in which we operate. The Company's three core values are embodied in everything we do.

- Teamwork – We are dedicated to the idea that a diversity of minds is better than one. Through open communication, we strive to collaborate with and include all of our colleagues to maximize our creativity and to make our good ideas great. We respect each other's opinions. We help colleagues who are struggling to improve, so our success is everyone's success.
- Trust – Our integrity is built on honest answers to our customers and colleagues. It is okay to make mistakes if we use them to learn. We navigate difficult situations with compassion. The success of our Company depends on the success of our people.
- Achievement – Speed and innovation are the cornerstones of our success. We are committed to being a solution for getting things done quickly and sustainably and a catalyst for great ideas for our shareholders, customers, the environment and each other. We are responsible for our performance, our results and our future.

2022 Environmental, Social and Governance Strategy and Risk Assessment Process

In 2021, our board of directors, executives and leaders throughout the organization focused to identify our top environmental, social and governance (ESG) priorities for 2022 and beyond. In 2022, for each of our top priorities, we focused to: (1) identify data, measures and metrics, (2) assess our current performance, (3) set both short- and long-term goals for each of our top priorities, and (4) begin to execute on our plans for each of these areas. The figure below shows the results of our ESG priority setting initiative in terms of both importance to stakeholders and our Company's success.



Our environmental key priorities include:

- Environmental compliance
- Energy use reduction
- Waste management/recycling

In 2022, our environmental initiative was to define our key priorities and focus areas. Once our key priorities were defined, we implemented cross functional teams to begin collecting base data related to energy use and waste management/recycling. Data is being monitored and tracked, with the intent to review 12 months of baseline data in 2023 to ensure action plans now and in the future are resulting in measurable results. For areas where data was not currently available, we are implementing action plans and processes to enable us to track baseline data in the future.

Our social key priorities include:

- Ethics and integrity
- Employee health and well being
- Diversity, equity and inclusion

In 2022, we strived to define our key priorities and focus areas. We established goals and initiatives specific to each key area, determined whether goals were global or regional in nature and established action plans to drive improvement.

Our governance key priorities include:

- Ethics, compliance and transparency
- Regulatory management
- Risk and crisis management

In 2022, we developed a formal enterprise risk management program, which included input from our board of directors and various levels of company leadership. Our program includes formal enterprise and fraud risk assessments. The results of the enterprise risk management program will be used to drive governance key priorities and company strategy in 2023 and beyond. In addition, we set regulatory management goals around International Traffic in Arms Regulation and global export compliance and established enhanced decision authority and signatory matrices to drive governance oversight and compliance.

## Environmental

### • **Digital Manufacturing Drives Sustainability**

As a digital manufacturer, we are able to assist our customers as they focus on materials management, operational productivity and on-demand solutions. Digital manufacturing is a solution our customers can deploy to reduce product waste by iterating part designs virtually, on a digital twin model before any actual production begins. With on-demand production of parts, there is also reduced reliance on storage facilities since inventory is virtual – the parts you need, when you need them. Our on-demand manufacturing model also helps customers with end-of-life planning for products, reducing the need for ordering excess parts with shifting market demand.

When paired with a robust e-commerce platform, digital manufacturing can also increase efficiencies in material selection and usage, the procurement process, and accelerating innovation. Furthermore, reducing scrap rate requires monitoring systems that enable automated process cycle sheet generation, ensuring run-to-run repeatability and reducing operator error. This kind of monitoring system can improve consistency in part production and reduce scrap costs, especially in injection molding and parts nonconformance. We believe sustainability in product development, and in manufacturing, is the future and we will continue to support our customers in their own sustainability journeys.

### • **Environmental Initiatives**

We are committed to having a positive impact on the environment. In 2022, we hosted InspirON in Europe, an online knowledge sharing event to focus on what design engineers need to consider when developing sustainable products for manufacturing. The event was designed to provide insight into designing more sustainable products and to explore how design can help make the manufacturing process greener and more efficient. The event covered topics ranging from: sustainable material selection, to the role that digital manufacturing and industry 4.0 will play, to how to develop and optimize a sustainable supply chain.

In 2021, we were awarded a Manufacturing Leadership Award from the National Association of Manufacturers (NAM) in the Sustainability Leadership category. This category recognizes companies embracing manufacturing processes that are non-polluting, conserve energy and natural resources, and are economically sound and safe for employees, communities, and consumers. In 2020, we installed nearly 1,900 solar panels on the roof of our facility in Plymouth, MN, one of our larger manufacturing facilities. The solar array covers nearly 20 percent of our energy use in Plymouth, MN and offsets the equivalent of 1.3 million pounds of CO<sub>2</sub> and preserves 775 acres of forest annually.

We strive to maximize recycling in both our manufacturing and office facilities. In our manufacturing facilities, we recycle metal, plastic and water used throughout the manufacturing processes. Finally, the Green Team, an employee-led organization, educates our employees on how they can positively impact the environment, both at work and at home. The Green Team also provides opportunities for employees to positively impact the environment, including activities like roadside cleanup and tree planting.

## Social

### • **Diversity, Equity and Inclusion**

At Protolabs, diversity, equity and inclusion matters. We are committed to nurturing a culture where we celebrate diversity, equity and inclusivity as a way of life. Our diversity and inclusion efforts start at the top with our board regularly reviewing initiatives. Our Diversity, Equity and Inclusion (DEI) Leadership Council was established to promote honest conversations, influence best practices and educate our employees. Our DEI Leadership Council members are employee representatives chosen from various functions and locations to work directly with our leadership team to drive change in our work environment. We also require certain employees to participate in annual unconscious bias training to further foster a work environment of fairness and sensitivity. As we continue to grow, we will continue to emphasize employee safety and having an inclusive work environment as top priorities. Our goal is to build diverse teams throughout the global organization and be a role model for the communities where we work and live. Uniqueness defines us as a company, from our custom products to our employees. Our pledge is to promote a global culture that invites, recognizes and embraces each individual's contributions to make a stronger "US".

### • **Workforce Demographics**

As of December 31, 2022, we had 2,568 full-time employees, including 1,787 full-time employees in the United States, 777 full-time employees in Europe and 4 full-time employees in Japan. 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, diverse and inclusive personnel.

We are an equal opportunity employer, and we believe that a diverse workforce made up of people with different ideas, strengths, interests and cultural backgrounds drives employee and business success. Our workforce is composed of a diverse group of engineers, technicians and business professionals from around the world and every walk of life.

We believe our employees are critical to our success and continually seek employee feedback to enhance employee engagement. In 2022, our attrition rates were higher than normal. Our attrition rates were 21.8% and 23.1% in the United States and Europe, respectively.

### • **Compensation and Benefits**

We believe our success depends in large measure on our ability to attract, retain and motivate a broad range of employees to be successful in a dynamic and changing business environment, and that a competitive compensation program is essential. In determining employee compensation, our executive leadership team reviews and considers several factors, including individual and corporate performance, input from managers, competitor market data from third party compensation surveys, our compensation philosophy and key principles, and the leadership's collective experience and knowledge. Annually, our executive leadership team reviews input from managers throughout our organization, including recommendations as to compensation levels that the managers believe are commensurate with an individual's job performance, skills, experience, qualifications, criticality to our company and development/career opportunities. We also award long-term equity-based compensation to high performing employees and managers who have the greatest impact on the creation of shareholder value to further align the interests of our employees and shareholders.

We provide employee benefits that meet or exceed the requirements of local law. We are committed to providing comprehensive benefits plans including, but not limited to, paid leave, retirement savings, health benefits, dental benefits, maternity leave, parental leave, family care leave, and childcare benefits. All overtime is performed and compensated in accordance with the law and the individual's employment contract or other applicable contract or collective agreement.

### • **Education**

We firmly believe that investing in the education of our employees is critical to our success. Our employees are provided access to a robust learning management system that offers hundreds of courses on various topics ranging from compliance to leadership and for job-specific skills. In 2022 and 2021, employees spent an average of 36 and 14 hours, respectively, per employee in training sessions. We provide an Educational Assistance Program for employees, which offers financial assistance for both professional and personal development to inspire employees to continuously enhance their skills and knowledge. We have a customized leadership development program designed for current and aspiring managers in search of developing their leadership skills. The program provides training on topics that are aligned with our Leadership Principles and our Core Values. In 2022, we launched a pilot mentorship program to provide opportunity for mentors and mentees to accelerate their personal and professional development through a one-on-one guided relationship.

In order to ensure our industry remains robust, we are committed to supporting Science, Technology, Engineering and Mathematics (STEM) programs in the cities where we have facilities. Through the Protolabs Foundation, we provide STEM education grants to eligible organizations. In addition, we partner with schools, colleges and universities to provide various outreach opportunities and sponsorships.

- **Health, Safety and Wellness**

We are committed to providing a safe and healthy working environment that minimizes health and safety risks. Our processes support accident prevention and prioritizes the health and safety of all of our employees and all others affected by their activities. We provide and require our employees to use personal protective equipment at all times. To ensure our employees understand the importance of safety, we provide regular, mandatory training.

We strive to continuously improve our employees' health, safety and wellness. Our "I Am" safety program teaches that safety is the responsibility of every individual in our organization. We believe this program is the basis for our excellent safety compliance record. We believe that our employees are our most valuable asset, and their safety and health is among our top priorities.

In addition to concentrating on employee safety in the workplace, we also focus on the overall wellbeing of our employees. We continue to invest in a variety of employee health and wellness programs, including gym membership discounts, on-site yoga classes at certain facilities, wellness newsletters and learning sessions, and providing various Employee Assistance Programs.

- **Charitable Giving**

We pride ourselves in being a responsible corporate citizen through our Protolabs Foundation. We support several charitable causes with our Employee Matching, Cool Ideas, and Major Gifts Programs. The Foundation's efforts serve as a sustaining investment in the future of the communities where our employees live and work, and also a commitment to build talent to support the future employment needs of the manufacturing industry. ProtoGivers, our employee led community involvement team, organizes a wide variety of charitable activities, including blood drives, working for Habitat for Humanity projects, volunteering for Feed My Starving Children, and making financial contributions to charitable causes, many of which are matched through the Protolabs Foundation Employee Giving Program. Our financial support and our community outreach programs are intended to improve the quality of life in the communities where we have facilities.

- **Human Rights**

We recognize our responsibility to protect human rights and we are committed to fostering an organizational culture which promotes support for internationally recognized human rights and labor standards. We strive to respect and promote human rights in accordance with the UN Guiding Principles on Business and Human Rights in our relationship with our employees, customers and suppliers. We have established a Human Rights Policy which is available on the Investor Relations section of our website.

- **Supply Chain**

We are committed to conducting our business in accordance with the highest ethical standards and in compliance with all applicable laws, rules and regulations. We expect our suppliers to share our principles and uphold our standards and for each to develop policies and programs as appropriate to ensure that all workers understand and adhere to these standards. We have established a Vendor Code of Conduct Policy, including guidance on anti-bribery, privacy and data protection; responsible sourcing of materials; environmental standards; labor and human rights and anti-tax evasion. Our full policy is available on the Investor Relations section of our website.

## 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, 2022, 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	34	12
United Kingdom	3	0
Netherlands	1	0

Our patents have expiration dates ranging from 2023 to 2042. We also owned approximately 29 registered United States trademarks or service marks as of December 31, 2022, with corresponding registered protection in Europe and Japan for the most important of these marks such as PROTO LABS, HUBS, 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.

## 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](http://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 Securities and Exchange Commission (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 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](http://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:

Robert Bodor	50	President, Chief Executive Officer and Director
Daniel Schumacher	48	Chief Financial Officer
Oleg Ryaboy	47	Chief Technology Officer
Michael R. Kenison	51	Vice President/General Manager – Americas
Bjoern Klaas	53	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. There are no arrangements or understandings between any of the executive officers and any other persons pursuant to which they were selected as an officer.

**Robert Bodor.** Dr. Bodor has served as our President and Chief Executive Officer since March 2021. Prior to his current position, Dr. Bodor served as Vice President/General Manager - Americas since 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.

**Daniel Schumacher.** Mr. Schumacher has served as our Chief Financial Officer and principal financial and accounting officer since June 2022. Prior to his current role, Mr. Schumacher served as our Interim Chief Financial Officer since December 2021. Mr. Schumacher also led investor communication, forecasting and planning, and business intelligence for the Company as Vice President of Investor Relations and FP&A from April 2017 to December 2021. From 2015 to 2017, Mr. Schumacher served as finance director in the Americas Finance & Operations organization of Stratasys, Inc, a 3D Printing OEM. From 2001 to 2015, Mr. Schumacher was in finance leadership roles of increasing responsibility for Rockwell Automation, an industrial automation company.

**Oleg Ryaboy.** Mr. Ryaboy has served as our Chief Technology Officer since September 2022. Prior to joining Proto Labs, Mr. Ryaboy served from 2010 to 2022 as Chief Technology Officer and Senior Vice President at Digital River, a global e-commerce platform and software-as-a-service company providing online storefronts.

**Michael Kenison.** Mr. Kenison has served as our Vice President/General Manager - Americas since June 2021. Prior to his current position, Mr. Kenison led various teams at the Company, including as Vice President of Manufacturing, a role he held since 2013. Before his tenure at Protolabs, Mr. Kenison served in several leadership roles within the industry, including as Vice President of Manufacturing at Cardiac Science, Inc. - a medical device provider of defibrillator technology.

**Bjoern Klaas.** Mr. Klaas has led our Company's business in Europe, Middle East and Africa as the Vice President and Managing Director since December 2017. Prior to joining Proto Labs, Mr. Klaas held key positions with global polymer supplier PolyOne from 2012 to 2017, most recently as its Vice President and General Manager for its ColorMatrix Group headquartered in the United States. From 2008 to 2012, Mr. Klaas worked at Colorant-Chromatics, a global leader for high temperature polymer formulations, as the General Manager for the global business.

## 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. The risks described below are not the only risks facing our Company. Risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially adversely affect our business, financial condition and operating results.

### 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, brokers of custom parts and alternative manufacturing vendors such as those utilizing 3D printing processes. 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 to develop new products manufactured internally 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 existing product lines. We mitigate this risk through products offered by our manufacturing partner network via our acquisition of Hubs in 2021. 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.

*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.

***Economic uncertainty arising from the recent COVID-19 pandemic has adversely affected our business and results of operations and could continue to do so in the future.***

On March 11, 2020, the World Health Organization declared the outbreak of the novel coronavirus (COVID-19) a pandemic. The COVID-19 pandemic and associated counter-acting measures implemented by governments around the world, as well as increased business uncertainty, has adversely affected our business and results of operations and could continue to do so in the future. The Company is monitoring the global COVID-19 pandemic and has taken steps to mitigate the risks to our employees, customers, suppliers and other stakeholders. The current business environment and quickly evolving market conditions require significant management judgment to interpret and quantify the actual and potential impact on our assumptions about future financial performance and operating cash flows. To the extent that changes in the current business environment continue to impact our ability to achieve levels of forecasted operating results and cash flows, if our stock price were to trade below book value per share for an extended period of time and/or should other events occur indicating the carrying value of our assets might be impaired, we may be required to recognize impairment losses on goodwill, intangible and tangible assets.

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

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;
- successfully integrate operations and offerings of acquisitions;
- react to challenges from existing and new competitors;
- continue to attract and retain R&D professionals who will continue to expand our technologies; and
- respond to an economic recession which negatively impacts manufacturers' ability to innovate and bring new products to market.

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

***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, 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 redundant computing systems for each of our United States and European 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 store confidential customer information in our systems that, if breached or otherwise subjected to unauthorized access, may harm our reputation or brand or expose us to liability.***

Our system stores, processes and transmits our customers' confidential information, including the intellectual property in their part designs 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.

***Aspects of our business are subject to privacy, data use and data security regulations, which may impact the way we use data to target customers.***

Privacy and security laws and regulations may limit the use and disclosure of certain information and require us to adopt certain cybersecurity and data handling practices that may affect our ability to effectively market our services to current, past or prospective customers. In many jurisdictions consumers must be notified in the event of a data security breach, and such notification requirements continue to increase in scope and cost. The changing privacy laws in the United States, Europe and elsewhere—including the General Data Protection Regulation (GDPR) in the European Union, which became effective May 25, 2018, and the California Consumer Privacy Act of 2018, which was enacted on June 28, 2018, and became effective on January 1, 2020—create new individual privacy rights and impose increased obligations, including disclosure obligations, on companies handling personal data. The impact of these continuously evolving laws and regulations could have a material adverse effect on the way we use data to digitally market and pursue our 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 regions where we operate 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.

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

We have established our operations in the United States and Europe and are seeking to further expand our international operations. In addition to English, our website is available in British English, French, German, Italian, Japanese and Spanish. Our international revenue accounted for approximately 21%, 21% and 20% of our total revenue in the years ended December 31, 2022, 2021 and 2020, 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;
- economic uncertainty, including significant volatility in global stock markets and currency exchange rates, resulting from Brexit;
- fluctuations in foreign currency exchange rates;
- differences in product developer and engineer preferences and means of procuring parts;
- 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.

***Climate change, or legal, regulatory or market measures to address climate change, may materially adversely affect our financial condition and business operations.***

Climate change resulting from increased concentrations of carbon dioxide and other greenhouse gases in the atmosphere could present risks to our future operations from natural disasters and extreme weather conditions, such as hurricanes, tornadoes, earthquakes, wildfires or flooding. Such extreme weather conditions could pose physical risks to our facilities and disrupt operation of our supply chain and may increase operational costs. Concern over climate change could result in new legal or regulatory requirements designed to mitigate the effects of climate change on the environment. If such laws or regulations are more stringent than current legal or regulatory requirements, we may experience increased compliance burdens and costs to meet the regulatory obligations and raw material sourcing, manufacturing operations and the distribution of our products may be 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.***

All of our in-house manufacturing products are produced in 9 manufacturing facilities, located in Rosemount, Minnesota; Plymouth, Minnesota; Brooklyn Park, Minnesota; Cary, North Carolina; Nashua, New Hampshire (2 facilities); Telford, United Kingdom; Putzbrunn, Germany; and Eschenlohe, Germany. 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;
- 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.

We mitigate such risks through the addition of access to a network of manufacturing partners via our acquisition of Hubs in 2021. 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.

***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; in October 2015, we acquired Alphaform to enable us to expand our 3D printing capabilities in Europe; in November 2017, we acquired RAPID to enable us to offer our customers Sheet Metal and expand our CNC Machining processes; and in 2021 we acquired Hubs to provide our customers with on-demand access to a global network of premium manufacturing partners. 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. 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 acquire;
- significant problems or liabilities associated with acquired businesses, assets or technologies, including increased intellectual property and employment related litigation exposure;
- an acquisition that results in a significant amount of goodwill being recognized, which could result in future impairment charges that would reduce our earnings; and
- requirements to record substantial charges and amortization expenses 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.

***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 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 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 \$38.2 million, \$44.2 million and \$36.9 million for the years ended December 31, 2022, 2021 and 2020, 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 customers' 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 customers' 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 customers' 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 2,487 full-time employees as of December 31, 2018 to 2,568 full-time employees as of December 31, 2022. We have expanded internationally, including establishing manufacturing operations in Europe in 2005. 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. In 2017, we expanded our product lines to include Sheet Metal through our acquisition of RAPID. In 2021, we expanded the breadth of products and lead times we offer through the acquisition of Hubs. 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;
- integrate the offer and operations of acquisitions;
- successfully identify, recruit, hire, train, develop, 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.

***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 several 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. Global supply chain disruptions may make scarce materials or supplies critical to our product offers and adversely impact our ability to manufacture and deliver products to our customers on time. 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.

***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 injection molding, CNC machining, 3D printing, sheet metal fabrication 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, including those set forth in the Tax Cuts and Jobs Act enacted in 2017, 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.

***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;
- ability to economically source products manufactured by our network of premium manufacturing partners;
- 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 health 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.

***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 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, injection-molded, 3D printed and sheet metal fabricated custom parts, we conform to certain international standards, including International Organization for Standardization, or ISO, for our facilities. The ISO standards to which we comply include the following:

<b>Location</b>	<b>9001:2015</b>	<b>AS9100D</b>	<b>13485:2016</b>	<b>14001:2015</b>
Headquarters, Minnesota, USA	Yes	Yes	No	No
Injection Molding, Minnesota, USA	Yes	No	No	No
CNC Machining, Minnesota, USA	Yes	Yes	No	No
3D Printing, North Carolina, USA	Yes	Yes	No	No
Sheet Metal, New Hampshire, USA	Yes	No	No	No
CNC Machining, New Hampshire, USA	Yes	Yes	No	No
Putzbrunn, DE	Yes	No	Yes	Yes
Eschenlohe, DE	Yes	No	No	No
Telford, UK	Yes	No	No	Yes
Hubs, Chicago, USA and Amsterdam, NL	Yes	No	No	No

If any system inspection reveals that we are not in compliance with applicable standards, registrars may take action against us, including issuing a corrective action request or discontinuing our certifications. If any of these actions were to occur, it could harm our reputation as well as our business, financial condition and operating results.

***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, 2022, our common stock traded as high as \$61.14 and as low as \$22.04. 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;
- changes in inflation driven by market conditions resulting in material and labor cost changes;
- 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; 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 Third 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, comply with Rule 14a-9 under the Securities Exchange Act of 1934, as amended, 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. In August 2022, we sold a nearby facility encompassing approximately 35,000 square feet of manufacturing space. We own a facility in Rosemount, Minnesota that encompasses approximately 130,000 square feet of manufacturing and office space. We own a facility in Plymouth, Minnesota that encompasses approximately 170,000 square feet of manufacturing and office space. We own a facility in Brooklyn Park, Minnesota that encompasses approximately 215,000 square feet of manufacturing and office space.

We own a facility in Cary, North Carolina that encompasses approximately 77,000 square feet of manufacturing and office space. In 2021, we entered into a lease agreement to expand our additive manufacturing footprint at a second location, which will add approximately 120,000 square feet in 2023. The lease contains a right to purchase option that we expect to exercise in 2023.

In 2021, we consolidated facilities in Nashua, New Hampshire reducing our total footprint by approximately 18,000 square feet. In May 2021, we purchased one of our previously leased facilities and continue to lease a second facility. The lease expires in 2026. The New Hampshire facilities provide a total of approximately 128,000 square feet of manufacturing and office space.

In 2021, we leased a facility in Chicago, Illinois that encompasses approximately 10,000 square feet of office space utilized to support our outsourced manufacturing operations. The lease expires in 2026.

***Europe***

Our European operations are headquartered in Telford, United Kingdom in a facility we own encompassing approximately 163,000 square feet of office and manufacturing space. In 2021, we constructed a new facility we own in Putzbrunn, Germany which encompasses approximately 70,000 square feet of office and manufacturing space.

We also lease office space in Mosbach, Germany; Le Bourget du Lac, France; Novara, Italy and Nacka, Sweden for sales, customer service and technical support staff. The leases expire at various times from 2023 to 2025. We also lease a manufacturing and office facility encompassing approximately 21,000 square feet in Eschenlohe, Germany. The lease expires in 2024.

Our outsourced manufacturing operations are headquartered in Amsterdam, Netherlands in a leased facility encompassing approximately 12,000 square feet of office space. The lease expires in 2025.

***Japan***

In 2022, we announced our intention to cease our Japan operations headquartered in Zama, Kanagawa, Japan (southwest of Tokyo), where we operate in a leased facility encompassing approximately 88,000 square feet of office and manufacturing space. The lease expires in 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 Shareholder Matters and Issuer Purchases of Equity Securities**

**Market Information**

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.

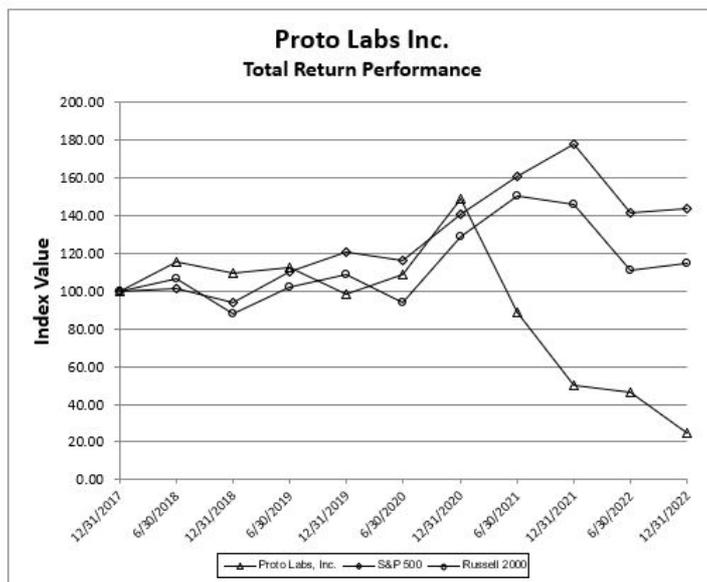
As of January 26, 2023, we had 11 holders of record of our common stock. The actual number of shareholders is greater than this number of record holders, and includes shareholders who are beneficial owners, but whose shares are held in street name by brokers and other nominees.

**Dividends**

We have never declared or paid any cash dividends on our capital stock and 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.

**Performance Graph**

The following graph shows a comparison from December 31, 2017 through December 31, 2022 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.



Index	12/31/2017	6/30/2018	12/31/2018	6/30/2019	12/31/2019	6/30/2020	12/31/2020	6/30/2021	12/31/2021	6/30/2022	12/31/2022
Proto Labs, Inc.	100.00	115.49	109.50	112.64	98.59	109.19	148.93	89.13	49.85	46.45	24.79
S&P 500	100.00	101.67	93.76	110.03	120.84	115.96	140.49	160.74	178.27	141.58	143.61
Russell 2000	100.00	107.00	87.82	102.02	108.66	93.87	128.61	150.47	146.23	111.23	114.70

**Unregistered Sales of Equity Securities and Issuer Purchases of Equity Securities**

On February 9, 2017, our board of directors 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. On May 16, 2019, we announced that our board of directors approved a \$50 million increase in our authorized stock repurchase program and extended the term of the program through December 31, 2023, which increased the stock repurchase program to \$100 million. On December 8, 2021, our board of directors approved another \$50 million increase in our authorized stock repurchase program, which increased the total repurchases authorized to \$150 million. On November 17, 2022, our board of directors approved \$50 million increase in our authorized stock repurchase program, which increased the total repurchases authorized to \$200 million and extended the term of the program through December 31, 2024. We have \$82.3 million remaining under this authorization. The timing and amount of any share repurchases will be determined by our management based on market conditions and other factors.

During the year ended December 31, 2022, we repurchased 857,123 shares at an average price of \$34.57 per share for an aggregate purchase price of \$29.6 million.

<b>Period</b>	<b>Total Number of Shares Purchased</b>	<b>Average Price Paid per Share</b>	<b>Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs</b>	<b>Maximum Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs (in thousands)</b>
October 1, 2022 through October 31, 2022	210,000	\$ 37.77	210,000	\$ 40,909
November 1, 2022 through November 30, 2022	116,357	\$ 28.53	116,357	\$ 87,589
December 1, 2022 through December 31, 2022	210,000	\$ 25.31	210,000	\$ 82,274
	<u>536,357</u>	\$ 30.89	<u>536,357</u>	\$ 82,274

Item 6. [Reserved]

## 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 one of the world's largest and fastest digital manufacturers of custom prototypes and on-demand production parts. We manufacture prototypes and low-volume production parts for companies worldwide that are under increasing pressure to bring their finished products to market faster than their competition. We utilize injection molding, computer numerical control (CNC) machining, 3D printing and sheet metal fabrication 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. In January 2021, we acquired Hubs, a leading online manufacturing platform based in Amsterdam, Netherlands, that provides customers with on-demand access to a global network of premium manufacturing partners. This acquisition creates an extremely comprehensive digital manufacturing offer, offering the broadest set of manufacturing services with the help of a global network of premium manufacturing partners. Our customers conduct nearly all of their business with us over the Internet. We target our products at 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 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). In 2017, we acquired RAPID to expand the number of process types we offer to include sheet metal fabrication and expand our CNC machining capability. In 2019, we added Carbon DLS to our 3D printing processes, introduced precision color matching on Injection Molding parts and launched production capabilities for metal 3D printing. In 2021, we acquired Hubs to provide customers with on-demand access to a global network of premium manufacturing partners. In 2022, we launched the first iteration of our integrated offer in Europe, which allows us to offer CNC manufacturing for eligible parts through the combination of our internal digital manufacturing and our digital network of manufacturing partners. 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 customers. 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 94%, 93% and 93% of our revenue in 2022, 2021 and 2020, respectively, derived from existing customers.

We have established our operations in the United States, Europe and Japan. We believe the United States and Europe are two of the largest geographic markets where product developers and engineers are located. On May 27, 2022, the Company's board of directors approved a plan for the closure of the Company's manufacturing facility in Japan and announced an intention to cease operations in the region. We entered the European market in 2005. We further expanded our operations in the United States through our acquisitions of Fineline in 2014, RAPID in 2017 and Hubs in 2021. Our operations were further expanded in Europe through our acquisitions of Alphaform in 2015 and Hubs in 2021. Our revenue outside of the United States accounted for approximately 21%, 21% and 20% of our consolidated revenue in the years ended December 31, 2022, 2021 and 2020, 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 \$445.6 million in 2018 to \$488.4 million in 2022. During this period, our operating expenses increased from \$149.8 million in 2018 to \$313.4 million in 2022, which includes a \$118.0 million goodwill impairment charge and \$6.9 million in costs related to closure of our Japan business. Our recent growth in revenue has been accompanied by increased cost of revenues and operating expenses. We expect to increase investment 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 are facing three mega trends, which are disrupting long-term product growth models. We believe our customers are facing increased pressure to shorten product life-cycles, to embed products with connectivity driven by the internet of things technology, and to deliver products that are personalized and customized to unique customer specifications. 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. The COVID-19 pandemic has also impacted the manufacturing environment. For example, the pandemic accelerated the digitization of manufacturing as companies pivoted to a work-from-home and socially-distanced manufacturing plant environment. As a result, the adoption of e-commerce was accelerated, which allows opportunity for us to provide valuable solutions to manufacturers looking to build resiliency in their supply chains through fast, on-demand manufacturers. 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, economic conditions, changes in product developer and engineer preferences or needs, developments in our industry and among our competitors, and developments in our customers' industries. For a more complete discussion of the risks facing our business, see Part I, Item 1A. "Risk Factors" of this Annual Report on Form 10-K.

## Key Financial Measures and Trends

### Revenue

Our operations are comprised of two geographic operating segments in the United States and Europe. On May 27, 2022, the Company's board of directors approved a plan for the closure of the Company's manufacturing facility in Japan and announced an intention to cease operations in the region. Revenue is derived from our Injection Molding, CNC Machining, 3D Printing and Sheet Metal 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 custom 3D-printed parts. Sheet Metal revenue consists of sales of fabricated sheet metal custom parts and assemblies. Our revenue is generated from a diverse customer base, with no single customer company representing more than 5% of our total revenue in 2022. 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, including:

- expanding the breadth and scope of our products by adding more sizes and materials to our offerings;
- the introduction of our 3D Printing product line through our acquisition of FineLine in 2014;
- expanding 3D printing to Europe through our acquisition of Alphaform in October 2015;
- the introduction of our Sheet Metal product line through our acquisition of RAPID in 2017;
- continuously improving the usability of our product lines such as our web-centric applications; and
- providing customers with on-demand access to a global network of premium manufacturing partners through our acquisition of Hubs in January 2021.

During 2022, we served 56,333 unique product developers and engineers who purchased our products through our web-based customer interface, an increase of 1.8% over the same period in 2021.

During 2021, we served 55,330 unique product developers and engineers who purchased our products through our web-based customer interface, an increase of 26.3% over the same period in 2020. The increase in product developers served was driven primarily by our acquisition of Hubs. Excluding the impact of Hubs, our product developers served increased 5.2% over the same period in 2020.

### Cost of Revenue, Gross Profit and Gross Margin

Cost of revenue consists primarily of raw materials, equipment depreciation, employee compensation including benefits and stock-based compensation, facilities costs and overhead allocations associated with the manufacturing process for molds and custom parts. We expect our personnel-related costs to increase in order to retain and attract top talent and remain competitive in the market. Overall, we expect cost of revenue to increase in absolute dollars.

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, over the last several years, we have made significant investments in additional factory space, equipment and infrastructure across our geographic segments. 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 by product line to remain relatively consistent over time. Our addition of Hubs in 2021 provides a complementary opportunity to add revenue growth through the use of premium manufacturing partners, without the significant investments required by our legacy business model.

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 mix of revenue by product line, pricing, sales volume, manufacturing costs, the costs associated with increasing production capacity, the mix between domestic and foreign revenue sources, the mix between revenue produced in our internal manufacturing operations and outsourced to our external manufacturing partners, and foreign exchange rates.

### **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.

The launch of our Protolabs 2.0 project, an internal business systems initiative impacting both external customer-facing and internal back-end systems, in the United States in the first quarter of 2021, and our acquisition of Hubs in January 2021, led to higher operating expenses in the first nine months of 2021. Our business strategy is to continue to be a leading online and technology-enabled manufacturer of quick-turn, on-demand injection-molded, CNC-machined, 3D-printed and sheet metal 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 in the future.

*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, which includes an allocation of information technology expense including amortization of PL 2.0 software assets. 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 and grow revenue.

*Research and development.* Research and development expense consists primarily of personnel and outside service costs related to the development of new processes and product lines, enhancement of existing product lines, software developed for internal use, maintenance of internally developed software, quality assurance and testing. Costs for internal use software are evaluated by project and capitalized where appropriate under Accounting Standards Codification (ASC) 350-40, *Intangibles — Goodwill and Other, Internal-Use Software*. We expect research and development expense to increase in the future as we seek to enhance our e-commerce interface technology, internal software and supporting business systems, and continue to expand our product lines.

*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, which includes an allocation of information technology expense including amortization of PL 2.0 software assets. We expect general and administrative expense to increase in the future as we continue to grow and expand as a global organization.

*Goodwill impairment.* Goodwill is tested for impairment annually as of the first day of the fourth quarter. An impairment charge for goodwill was recognized for our Europe reporting unit in the fourth quarter of 2022, as it was determined the estimated fair value of the reporting unit, including goodwill, was less than its carrying amount.

*Closure of Japan business.* Closure of Japan business expense is driven by our decision to close the Japan manufacturing facility and exit the Japan market. The expenses consist primarily of operating expense, including employee severance, write-down of fixed assets, facility-related charges and goodwill impairment charges.

*Changes in fair value of contingent consideration.* Our contingent consideration liability is related to our acquisition of Hubs in 2021 and is evaluated quarterly for changes in fair value.

### **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. Overall, our effective tax rate for 2022 and beyond may differ from historical effective tax rates due to increases in losses in foreign operations that are not eligible for tax benefits on account of valuation allowances, as well as any future tax law changes that may impact the effective tax rate.

## 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,				Change		Year Ended December 31,				Change	
	2022		2021		\$	%	2021		2020		\$	%
Revenue	\$ 488,398	100.0%	\$ 488,098	100.0%	\$ 300	0.1	\$ 488,098	100.0%	\$ 434,395	100.0%	\$ 53,703	12.4
Cost of revenue	272,933	55.9	265,407	54.4	7,526	2.8	265,407	54.4	216,568	49.9	48,839	22.6
Gross profit	215,465	44.1	222,691	45.6	(7,226)	(3.2)	222,691	45.6	217,827	50.1	4,864	2.2
Operating expenses:												
Marketing and sales	82,752	17.0	82,175	16.8	577	0.7	82,175	16.8	69,309	16.0	12,866	18.6
Research and development	38,222	7.8	44,241	9.1	(6,019)	(13.6)	44,241	9.1	36,940	8.5	7,301	19.8
General and administrative	67,544	13.8	68,436	14.0	(892)	(1.3)	68,436	14.0	51,742	11.9	16,694	32.3
Goodwill impairment	118,008	24.2	-	-	118,008	*	-	-	-	-	-	-
Closure of Japan business	6,922	1.4	-	-	6,922	*	-	-	-	-	-	-
Changes in fair value of contingent consideration	-	-	(12,503)	(2.6)	12,503	*	(12,503)	(2.6)	-	-	(12,503)	*
Total operating expenses	313,448	64.2	182,349	37.3	131,099	71.9	182,349	37.3	157,991	36.4	24,358	15.4
(Loss) income from operations	(97,983)	(20.1)	40,342	8.3	(138,325)	(342.9)	40,342	8.3	59,836	13.8	(19,494)	(32.6)
Other income (expense), net	106	-	(158)	-	264	(167.1)	(158)	-	3,109	0.7	(3,267)	(105.1)
(Loss) income before income taxes	(97,877)	(20.1)	40,184	8.2	(138,061)	(343.6)	40,184	8.2	62,945	14.5	(22,761)	(36.2)
Provision for income taxes	5,585	1.1	6,812	1.4	(1,227)	(18.0)	6,812	1.4	12,078	2.8	(5,266)	(43.6)
Net (loss) income	\$ (103,462)	(21.2%)	\$ 33,372	6.8%	\$ (136,834)	(410.0%)	\$ 33,372	6.8%	\$ 50,867	11.7%	\$ (17,495)	(34.4%)

\*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,		
	2022	2021	2020
Stock options and grants	\$ 16,103	\$ 17,553	\$ 13,327
Employee stock purchase plan	1,442	1,542	1,346
Total stock-based compensation expense	\$ 17,545	\$ 19,095	\$ 14,673
Cost of revenue	\$ 2,172	\$ 2,595	\$ 2,451
Operating expenses:			
Marketing and sales	3,295	3,736	3,121
Research and development	2,189	2,833	2,440
General and administrative	9,889	9,931	6,661
Total stock-based compensation expense	\$ 17,545	\$ 19,095	\$ 14,673

## Comparison of Years Ended December 31, 2022 and 2021

### Revenue

Revenue by reportable segment and the related changes for 2022 and 2021 is summarized as follows:

(dollars in thousands)	Year Ended December 31,				Change	
	2022		2021		\$	%
	\$	% of Total Revenue	\$	% of Total Revenue		
Revenue						
United States	\$ 387,399	79.3%	\$ 384,458	78.8%	\$ 2,941	0.8%
Europe	92,770	19.0	90,399	18.5	2,371	2.6
Japan	8,229	1.7	13,241	2.7	(5,012)	(37.9)
Total revenue	\$ 488,398	100.0%	\$ 488,098	100.0%	\$ 300	0.1%

Our revenue increased \$0.3 million, or 0.1%, for 2022 compared with 2021. By reportable segment, revenue in the United States increased \$2.9 million, or 0.8%, for 2022 compared with 2021. Revenue in Europe increased \$2.4 million, or 2.6%, for 2022 compared with 2021. Revenue in Japan decreased \$5.0 million, or 37.9%, for 2022 compared with 2021. The decrease in Japan revenue was driven by our decision in the second quarter of 2022 to close our Japan operations. International revenue was negatively impacted by \$11.6 million during 2022 compared to the same period in 2021 as a result of foreign currency movements, primarily the weakening of the British Pound and Euro relative to the United States Dollar.

During 2022, we served 56,333 unique product developers and engineers, an increase of 1.8% over 2021. Our growth in product developers and engineers served increased at a greater rate than our revenue growth, resulting in a decrease in the average spend per product developer and engineer. The decrease in average spend per product developer and engineer was driven by the impact of foreign currency movements, primarily the weakening of the British Pound and Euro relative to the United States Dollar.

Revenue by product line and the related changes for 2022 and 2021 is summarized as follows:

(dollars in thousands)	Year Ended December 31,				Change	
	2022		2021		\$	%
	\$	% of Total Revenue	\$	% of Total Revenue		
Revenue						
Injection Molding	\$ 200,578	41.1%	\$ 226,117	46.3%	\$ (25,539)	(11.3%)
CNC Machining	188,372	38.5	166,811	34.2	21,561	12.9
3D Printing	78,988	16.2	72,721	14.9	6,267	8.6
Sheet Metal	19,498	4.0	20,397	4.2	(899)	(4.4)
Other Revenue	962	0.2	2,052	0.4	(1,090)	(53.1)
Total revenue	\$ 488,398	100.0%	\$ 488,098	100.0%	\$ 300	0.1%

By product line, our revenue increase was driven by a 12.9% increase in CNC Machining revenue and an 8.6% increase in 3D Printing revenue, which was partially offset by an 11.3% decrease in Injection Molding revenue, a 4.4% decrease in Sheet Metal revenue, and a 53.1% decrease in Other Revenue, in each case for 2022 compared with 2021.

#### Cost of Revenue, Gross Profit and Gross Margin

**Cost of Revenue.** Cost of revenue increased \$7.5 million, or 2.8%, for 2022 compared to 2021, which was greater than the rate of revenue increase of 0.1% for 2022 compared to 2021. Hubs provided a \$7.6 million increase in cost of revenue due to higher revenue volume for the year ended December 31, 2022 when compared to the same period in 2021. The \$0.1 million decrease in cost of revenue in our legacy business was driven by personnel and related cost decreases of \$5.3 million, which were partially offset by an increase in raw material and product costs of \$4.8 million and an increase in equipment and facility related costs of \$0.4 million.

**Gross Profit and Gross Margin.** Gross profit decreased from \$222.7 million in 2021 to \$215.5 million in 2022. Gross margin decreased from 45.6% of revenue in 2021 to 44.1% of revenue in 2022 primarily due to a decrease in Injection Molding revenue.

#### Operating Expenses

**Marketing and Sales.** Marketing and sales expense increased \$0.6 million, or 0.7%, for 2022 compared to 2021. Hubs provided a \$2.6 million increase in marketing and sales expense during 2022. In our legacy business, a decrease of \$2.4 million in personnel and related cost decreases was partially offset by a \$0.4 million increase in marketing and sales expenses.

**Research and Development.** Our research and development expense decreased \$6.0 million, or 13.6%, for 2022 compared to 2021 primarily due to legacy personnel and related cost decreases of \$6.6 million driven by personnel and contractor resources dedicated to the launch of our PL 2.0 system in 2021 and decreases in other operating costs of \$0.7 million, which were partially offset by a \$0.3 million increase in professional services. Hubs provided increases of \$1.0 million in research and development expense.

**General and Administrative.** Our general and administrative expense decreased \$0.9 million, or 1.3%, for 2022 compared to 2021 primarily due to a decrease of \$2.4 million in administrative costs, a decrease of \$2.2 million in professional service costs, a decrease of \$0.8 million in personnel and related costs, and a decrease of \$0.3 million in stock-based compensation cost, which were partially offset by an increase in research and development costs of \$4.8 million provided by Hubs.

**Goodwill impairment.** A goodwill impairment charge of \$118.0 million was recognized in the fourth quarter of 2022, as it was determined the estimated fair value of our Europe reporting unit, including goodwill, was less than its carrying amount.

**Closure of Japan business.** Our decision to close our Japan business resulted in \$6.9 million in operating expenses during 2022. Operating expenses included \$2.3 million of employee severance, \$2.4 million related to the write-down of fixed assets, \$0.9 million of facility-related charges, \$0.6 million in goodwill impairment charges, \$0.7 million in other closure related charges. We had no expenses related to the closure of our Japan business in 2021.

**Changes in fair value of contingent consideration.** We had no contingent consideration liabilities recorded during 2022. The fair value of contingent consideration associated with the acquisition of Hubs decreased \$12.5 million during 2021.

*Income (Loss) from Operations*

Income from operations decreased \$138.3 million, or 342.9%, for 2022 compared with 2021. By reportable segment, income from operations for the United States decreased \$4.8 million. Income from operations for Europe decreased \$131.1 million for 2022 compared with 2021, which was primarily driven by a \$118.0 goodwill impairment charge. Loss from operations included in Corporate Unallocated and Japan decreased \$2.4 million for 2022 compared with 2021. The loss from operations is primarily driven by the Europe goodwill impairment charge.

*Other (Expense) Income, Net and Provision for Income Taxes*

*Other (Expense) Income, Net.* We recognized other income, net of \$0.1 million in 2022, an increase of \$0.3 million compared to other expense, net of \$0.2 million for 2021. Other income, net for 2022 primarily consisted of \$1.0 million in interest income, which was partially offset by a \$0.9 million loss on foreign currency and other losses. Other income, net for 2021 primarily consisted of a \$0.9 million loss on foreign currency, which is partially offset by a \$0.2 million in interest income and \$0.5 million in other income.

*Provision for Income Taxes.* Our income tax provision decreased by \$1.2 million for 2022 compared to 2021. The decrease in the provision is primarily due to lower taxable income and the lower effective tax rate. Our effective tax rate of (5.7)% for 2022 decreased 22.7% compared to 17.0% for the same period in 2021 primarily due to the tax rate impact of the goodwill impairment and a benefit from the decrease in the tax liability for uncertain tax positions. These benefits were partially offset by an increase in the valuation allowances on losses from foreign operations.

***Comparison of Years Ended December 31, 2021 and 2020***

For a comparison of our results of operations for fiscal years ended December 31, 2021 and December 31, 2020, see "Part II, Item 7 Management's Discussion and Analysis of Financial Condition and Results of Operations" of our Annual Report on Form 10-K for the fiscal year ended December 31, 2021, filed with the SEC on February 18, 2022.

**Liquidity and Capital Resources***Cash Flows*

The following table summarizes our cash flows for the years ended December 31, 2022, 2021 and 2020:

(dollars in thousands)	Year Ended December 31,		
	2022	2021	2020
Net cash provided by operating activities	\$ 62,079	\$ 55,242	\$ 106,969
Net cash used in investing activities	(43,092)	(94,664)	(95,473)
Net cash used in financing activities	(27,922)	(22,198)	(10,726)
Effect of exchange rates on cash and cash equivalents	(436)	(54)	1,608
Net (decrease) increase in cash and cash equivalents	<u>\$ (9,371)</u>	<u>\$ (61,674)</u>	<u>\$ 2,378</u>

*Sources of Liquidity*

We finance our operations and capital expenditures through cash flow from operations. We had cash and cash equivalents of \$56.6 million as of December 31, 2022, a decrease of \$9.4 million from December 31, 2021. The decrease in our cash was primarily due to cash used in investing activities for net purchases of, and proceeds from sales of, marketable securities of \$25.5 million, purchases of property, equipment and other capital assets of \$17.6 million, and cash used in financing activities for repurchases of common stock of \$29.7 million, which were partially offset by cash generated through operations of \$62.1 million. We had cash and cash equivalents of \$65.9 million as of December 31, 2021, a decrease of \$61.7 million from December 31, 2020. The decrease in our cash was primarily due to cash used in investing activities for our acquisition of Hubs of \$127.4 million, purchases of property, equipment and other capital assets of \$34.2 million, and cash used in financing activities for repurchases of common stock of \$23.3 million, which were partially offset by net proceeds from investments in marketable securities of \$67.0 million and cash generated through operations of \$55.2 million.

As of December 31, 2022, the amount of cash and cash equivalents held by foreign subsidiaries was \$19.6 million. Our intent is to continue 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 of \$62.1 million during 2022 primarily consisted of net loss of \$103.4 million, adjusted for certain non-cash items, including depreciation and amortization of \$39.4 million, stock-based compensation expense of \$17.6 million, loss on goodwill impairment of \$118.0 million and impairments related to closure of Japan business of \$2.8 million, which were partially offset by changes in deferred taxes of \$9.5 million and changes in operating assets and liabilities and other items totaling \$2.8 million. The cash flow from operating activities during 2022 compared to 2021 increased \$6.8 million primarily due to changes in operating assets and liabilities and other items of \$22.0 million, loss on impairment of goodwill of \$118.0 million, changes in fair value of contingent consideration of \$13.3 million and impairments related to closure of Japan business of \$2.8 million, which were partially offset by decreases in net income of \$136.8 million, decreases in deferred taxes of \$9.8 million, decreases in depreciation and amortization of \$1.1 million and decreases in stock-based compensation of \$1.6 million.

Cash flow from operating activities of \$55.2 million during 2021 primarily consisted of net income of \$33.4 million, adjusted for certain non-cash items, including depreciation and amortization of \$40.5 million and stock-based compensation expense of \$19.1 million, which were partially offset by a decrease in the fair value of contingent consideration of \$13.3 million and changes in operating assets and liabilities and other items totaling \$24.5 million. The cash flow from operating activities during 2021 compared to 2020 decreased \$51.7 million primarily due to decreases in net income of \$17.5 million, increases in accounts receivable of \$20.1 million driven by timing of cash receipts, a decrease in the fair value of contingent consideration of \$13.3 million, decreases in deferred taxes of \$7.2 million, and decreases of \$6.0 million in other items, which were partially offset by increases in depreciation and amortization of \$7.9 million and increases in stock-based compensation of \$4.4 million.

*Cash Flows from Investing Activities*

Cash used in investing activities was \$43.1 million for the year ended December 31, 2022, consisting of \$17.6 million for the net purchases of property, equipment and other capital assets and \$25.5 million of net purchases of marketable securities.

Cash used in investing activities was \$94.7 million for the year ended December 31, 2021, consisting of \$127.4 million in cash used for acquisitions, net of cash acquired and \$34.2 million for the purchases of property, equipment and other capital assets, which were partially offset by \$67.0 million of net proceeds from investments in marketable securities.

*Cash Flows from Financing Activities*

Cash used in financing activities was \$27.9 million for the year ended December 31, 2022, consisting of \$29.7 million in repurchases of common stock, \$1.7 million in shares withheld for tax obligations associated with equity transactions, and \$0.5 million for repayments of finance lease obligations, which were partially offset by \$4.0 million in proceeds from issuance of common stock from equity plans.

Cash used in financing activities was \$22.2 million for the year ended December 31, 2021, consisting of \$23.3 million in repurchases of common stock, \$4.2 million in shares withheld for tax obligations associated with equity transactions, and \$0.6 million for repayments of finance lease obligations, which were partially offset by \$5.9 million in proceeds from issuance of common stock from equity plans.

**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, 3D Printing and Sheet Metal 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 recent annual capital expenditures have varied between 4% and 11% 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, 2022, our contractual obligations are \$21.4 million related to current and long-term operating and finance lease liabilities.

***Financing Arrangements***

We had no financing arrangements as of December 31, 2022 and 2021.

***Inflation***

We experience normal inflation and changing prices, primarily on our production materials and labor. In 2022, 2021 and 2020 wage inflation contributed to our lower gross margin.

***Critical Accounting 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. Critical accounting estimates are those estimates made in accordance with GAAP which involve a significant level of estimation uncertainty and have had or are reasonably likely to have a material impact on our financial condition and results of operations. On an ongoing basis, we evaluate our estimates, including those related to revenue recognition, goodwill, capitalized software costs, 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 and estimates 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 and estimates, as well as a description of our other accounting policies and estimates.

### **Revenue Recognition**

We recognize revenue for our internal and outsourced manufacturing operations in accordance with ASC 606, *Revenue from Contracts with Customers*. We manufacture custom parts to specific customer orders that have no alternative use to us, and we believe there is a legally enforceable right to payment for performance completed to date on internally and outsourced manufactured parts. For manufactured parts that meet these two criteria, we will recognize revenue over time. Revenue is recognized over time using the input method based on time in production as a percentage of total estimated production time to measure progress toward satisfying performance obligations using the estimated total time necessary to complete the parts per the customer's order and an estimate of inventory and production costs incurred to date. The input method requires an analysis of the incurred time in production and an estimate of the total time necessary to complete the total parts per the customer's order. The majority of our CNC machining, 3D printing, and sheet metal contracts have a single performance obligation. The majority of our injection molding contracts have multiple performance obligations including one obligation to produce the mold and a second obligation to produce parts. For injection molding contracts with multiple performance obligations, we allocate revenue to each performance obligation based on its relative standalone selling price. We generally determine standalone selling price based on the price charged to customers.

### **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 allocated to our reporting units, which are determined by the discrete financial information available for the component and whether it is regularly reviewed by segment management. Our reporting units are the United States and Europe. Goodwill is not amortized.

Goodwill is tested for impairment annually as of the first day of the fourth quarter, 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. The quantitative impairment test requires judgment, including the identification of reporting units, the assignment of assets, liabilities and goodwill to reporting units, and the determination of fair value of each reporting unit. The impairment test requires the comparison of the fair value of each reporting unit with its carrying amount, including goodwill. In performing the impairment test, we determined the fair value of its reporting units through the income approach by using discounted cash flow (DCF) analyses. Determining fair value requires us to make judgments about appropriate discount rates, perpetual growth rates and the amount and timing of expected future cash flows. The cash flows employed in the DCF analysis for each reporting unit are based on the reporting unit's budget, long-term business plan and recent operating performance. Discount rate assumptions are based on an assessment of the risk inherent in the future cash flows of the respective reporting unit and market conditions. Given the inherent uncertainty in determining the assumptions underlying a DCF analysis, actual results may differ from those used in our valuations. In assessing the reasonableness of the determined fair values, we also reconciled the aggregate determined fair value of the Company to the Company's market capitalization, which, at the date of its 2022 impairment test, included a 9 percent control discount. Significant assumptions used in the DCF analysis included forecasted revenue and related revenue growth rate, gross margins rate, operating expenses as a percentage of revenue rate and weighted-average cost of capital. As a result of the analyses, a \$118.0 million impairment related to the Europe reporting unit was identified, which represents a write-off of all Europe goodwill.

### **Capitalized Software Costs**

We follow ASC 350-40, *Intangibles – Goodwill and Other, Internal-Use Software*, in accounting for internally developed software. Costs for internal-use software are evaluated by project and capitalized where appropriate.

### **Other Intangible Assets**

We recognize other intangible assets in accordance with ASC 350, *Intangibles—Goodwill and Other*. Other intangible assets include software technology, customer relationships and other intangible assets acquired from independent parties. We used a multi-period excess earnings method under the income approach to measure the software platform when acquired through an acquisition. In 2021, the significant assumptions used to estimate the value of the software platform included forecasted annual revenue growth, gross margin rates, operating expenses as a percentage of sales and the weighted-average cost of capital, which are affected by our business plans and expectations about future market or economic conditions. Other intangible assets with a definite life are amortized over a period ranging from two to 12 years on a straight line basis, and 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, 2022, 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 and stock price volatility. 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 of stock options is estimated from the vesting period of the award and represents the weighted average period that our stock options are expected to be outstanding. 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. We account for forfeitures as they occur.

The fair value of each new employee 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,		
	2022	2021	2020
Risk-free interest rate	1.94 - 3.40%	0.80 - 1.12%	0.50 - 1.47%
Expected life (years)	6.25	6.25	6.25
Expected volatility	45.95 - 46.03%	45.28 - 45.53%	42.40 - 43.83%
Expected dividend yield	0%	0%	0%
Weighted average grant date fair value	\$23.11	\$128.14	\$45.32

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. 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,		
	2022	2021	2020
Risk-free interest rate	0.17 - 4.60%	0.06 - 0.17%	0.12 - 0.17%
Expected life (months)	6.00	6.00	6.00
Expected volatility	47.05 - 67.84%	53.44 - 65.53%	50.85 - 59.99%
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 relating to stock options, restricted stock awards, performance stock units and our ESPP of \$17.5 million, \$19.1 million and \$14.7 million during the years ended December 31, 2022, 2021 and 2020, respectively. As of December 31, 2022, we had \$3.9 million of unrecognized stock-based compensation costs related to unvested stock options that are expected to be recognized over a weighted average period of 2.6 years. We issued options to purchase 118,434, 57,901 and 60,065 shares of our common stock in 2022, 2021 and 2020, respectively. As of December 31, 2022, we had \$21.1 million of unrecognized stock-based compensation costs related to non-vested restricted stock, which is expected to be recognized over a weighted average period of 2.4 years. We issued restricted stock awards of 315,432, 205,996 and 108,179 shares of our common stock in 2022, 2021 and 2020, respectively. As of December 31, 2022, we had \$2.5 million of unrecognized stock-based compensation costs related to non-vested performance stock, which is expected to be recognized over a weighted average period of 2.0 years. We issued performance stock awards of 35,697, 15,078 and 19,956 shares of our common stock in 2022, 2021 and 2020, 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. The Company recognizes the effect of income tax positions only if sustaining those positions is more likely than not. The Company records penalties and interest related to unrecognized tax benefits in income taxes in the Company's Consolidated Statements of Income. Including interest and penalties, we have established a liability for uncertain tax positions of \$4.4 million as of December 31, 2022.

The effective tax rate decreased by 22.7% for the year ended December 31, 2022 when compared to 2021 primarily due to the tax rate impact of the goodwill impairment and a benefit from the decrease in the tax liability for uncertain tax positions. These benefits were partially offset by an increase in the valuation allowances on losses from foreign operations.

***Recently adopted accounting pronouncements***

We did not recently adopt any accounting pronouncements that had a material impact on our Consolidated Financial Statements. There are no pending accounting pronouncements that are expected to have a material impact on our Consolidated Financial Statements.

**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 currency 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 foreign currency losses of \$0.1 million and \$0.9 million for the years ended December 31, 2022 and December 31, 2021, respectively.

**Item 8. Financial Statements and Supplementary Data**

**Proto Labs, Inc.  
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**Report of Independent Registered Public Accounting Firm**

To the Shareholders and the Board of Directors of Proto Labs, Inc.

**Opinion on the Financial Statements**

We have audited the accompanying consolidated balance sheets of Proto Labs, Inc. and subsidiaries (the Company) as of December 31, 2022 and 2021, the related consolidated statements of comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2022, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, 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) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, 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 21, 2023 expressed an unqualified opinion thereon.

**Basis for Opinion**

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

**Critical Audit Matters**

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

**Revenue Recognition – Revenue Recognized Over Time**

*Description of the Matter*

As discussed in Notes 2 and 3 to the consolidated financial statements, the Company provides quality, quick-turn prototyping and on-demand manufacturing services. The majority of revenue recognized in a reporting period is based on completed, invoiced contracts. The Company manufactures custom parts to specific customer orders that have no alternative use to the Company, and the Company believes that there is a legally enforceable right to payment for performance completed to date on the internally and outsourced manufacturing parts. Revenue is recognized over time for internal and outsourced manufactured parts which meet these two criteria. For revenue recognized over time, management uses the input method based on time in production as a percentage of total estimated production time to measure progress toward satisfying performance obligations using the estimated total time necessary to complete the parts per the customer's order and an estimate of inventory and production costs incurred to date.

Auditing revenue recognized over time was challenging because the relevant accounting standard requires the Company to estimate the progress towards satisfaction of performance obligations, applying a single appropriate method to measure progress. The input method requires an analysis of the incurred time in production and an estimate of the total time necessary to complete the total parts per the customer's order. The Company also estimates inventory and production costs incurred to date. These estimates are based on management's assessment of the current status of production as well as historical results.

*How We Addressed the Matter in Our Audit*

We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's process for recognizing revenue over time. This included testing controls over management's evaluation of contract terms, the estimation of production time incurred to date and total production time used in the input method, estimation of a reasonable profit margin and the completeness and accuracy of the data used in the input method.

To test the Company's revenue recognition over time, we performed audit procedures that included, among others, inspecting a sample of contracts to evaluate the existence of an enforceable right to payment for performance completed to-date, evaluating the progress towards completion of orders in process through examination of a sample of product shipments subsequent to the end of the reporting period, evaluating the reasonableness of management's estimate of profit margins based on a comparison to historical margins, testing the appropriateness of the timing and amount of revenue recognized over time based on the underlying inputs, and performing an independent sensitivity analysis to evaluate the impact on revenues of changes in significant assumptions.

**Valuation of Goodwill for the United States reporting unit**

*Description of the Matter*

At December 31, 2022, the Company had goodwill of approximately \$274 million related to the United States reporting unit. As discussed in Notes 2 and 6 of the consolidated financial statements, the Company performs goodwill impairment testing on an annual basis as of the first day of the fourth quarter, and between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount.

Auditing management's goodwill impairment test for the United States reporting unit was complex and judgmental due to the significant estimation required in determining the fair value of the reporting unit. In particular, the Company estimates fair value using the income approach which is sensitive to certain assumptions, such as forecasted revenue and related revenue growth rate, gross margins rate, operating expenses as a percentage of revenue rate, and weighted average cost of capital which are affected by management's business plans and expectations about future market or economic conditions.

*How We Addressed the Matter in Our Audit*

We obtained an understanding, evaluated the design, and tested the operating effectiveness of controls over the Company's goodwill impairment review process, including controls over management's review of the significant assumptions described above.

To test the estimated fair value of the United States reporting unit, we performed audit procedures that included, among others, assessing the valuation methodology used by management and testing the significant assumptions discussed above, as well as the underlying data used by the Company in its analysis. For example, we compared the significant assumptions used by management in the prospective financial information to current industry, market and economic trends as well as other relevant factors. We assessed the reasonableness of the forecasted future revenue growth rate, gross margins rate and operating expenses as a percentage of revenues rate by comparing the forecasts to historical results. We involved our valuation specialists to assist in our evaluation of the valuation models, methodologies and significant assumptions used by the Company, specifically the weighted average cost of capital.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2011.

Minneapolis, Minnesota  
February 21, 2023

**Report of Independent Registered Public Accounting Firm**

To the Shareholders and the Board of Directors of Proto Labs, Inc.

**Opinion on Internal Control over Financial Reporting**

We have audited Proto Labs, Inc. and subsidiaries' internal control over financial reporting as of December 31, 2022, 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). In our opinion, Proto Labs, Inc. and subsidiaries (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of Proto Labs, Inc. as of December 31, 2022 and 2021, the related consolidated statements of comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2022, and the related notes and our report dated February 21, 2023 expressed an unqualified opinion thereon.

**Basis for Opinion**

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's 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 are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. 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.

**Definition and Limitations of Internal Control Over Financial Reporting**

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

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

/s/ Ernst & Young LLP

Minneapolis, Minnesota  
February 21, 2023

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

	December 31,	
	2022	2021
<b>Assets</b>		
<b>Current assets</b>		
Cash and cash equivalents	\$ 56,558	\$ 65,929
Short-term marketable securities	23,568	11,580
Accounts receivable, net of allowance for doubtful accounts of \$1,706 and \$1,948 as of December 31, 2022 and December 31, 2021, respectively	76,225	80,051
Inventory	13,578	13,161
Prepaid expenses and other current assets	12,597	11,450
Income taxes receivable	4,042	1,321
Total current assets	186,568	183,492
Property and equipment, net	257,785	280,346
Goodwill	273,991	400,610
Other intangible assets, net	31,250	37,998
Long-term marketable securities	26,419	14,340
Operating lease assets	3,844	5,578
Finance lease assets	17,532	1,898
Other long-term assets	4,779	4,320
Total assets	<u>\$ 802,168</u>	<u>\$ 928,582</u>
<b>Liabilities and shareholders' equity</b>		
<b>Current liabilities</b>		
Accounts payable	\$ 17,356	\$ 25,364
Accrued compensation	12,743	13,704
Accrued liabilities and other	22,384	11,980
Current operating lease liabilities	1,561	3,298
Current finance lease liabilities	17,537	550
Total current liabilities	71,581	54,896
Long-term operating lease liabilities	2,255	2,245
Long-term finance lease liabilities	-	1,351
Long-term deferred tax liabilities	26,322	35,892
Other long-term liabilities	4,362	5,705
Total liabilities	104,520	100,089
<b>Shareholders' equity</b>		
Preferred stock, \$0.001 par value, authorized 10,000,000 shares; issued and outstanding 0 shares as of December 31, 2022 and December 31, 2021, respectively	-	-
Common stock, \$0.001 par value, authorized 150,000,000 shares; issued and outstanding 26,888,425 and 27,465,945 shares as of December 31, 2022 and December 31, 2021, respectively	27	28
Additional paid-in capital	473,740	468,548
Retained earnings	258,236	376,734
Accumulated other comprehensive loss	(34,355)	(16,817)
Total shareholders' equity	697,648	828,493
Total liabilities and shareholders' equity	<u>\$ 802,168</u>	<u>\$ 928,582</u>

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,		
	2022	2021	2020
<b>Statements of Operations:</b>			
Revenue	\$ 488,398	\$ 488,098	\$ 434,395
Cost of revenue	272,933	265,407	216,568
Gross profit	215,465	222,691	217,827
Operating expenses			
Marketing and sales	82,752	82,175	69,309
Research and development	38,222	44,241	36,940
General and administrative	67,544	55,933	51,742
Goodwill impairment	118,008	-	-
Closure of Japan business	6,922	-	-
Total operating expenses	313,448	182,349	157,991
(Loss) income from operations	(97,983)	40,342	59,836
Other (expense) income, net	106	(158)	3,109
(Loss) income before income taxes	(97,877)	40,184	62,945
Provision for income taxes	5,585	6,812	12,078
Net (loss) income	\$ (103,462)	\$ 33,372	\$ 50,867
Net (loss) income per share:			
Basic	\$ (3.77)	\$ 1.21	\$ 1.90
Diluted	\$ (3.77)	\$ 1.21	\$ 1.89
Shares used to compute net (loss) income per share:			
Basic	27,409,838	27,617,627	26,737,425
Diluted	27,409,838	27,653,099	26,896,357
<b>Other Comprehensive Income (Loss), net of tax</b>			
Foreign currency translation adjustments	\$ (16,278)	\$ (13,278)	\$ 3,598
Net unrealized gains (losses) on investments in securities	(1,260)	(119)	-
Comprehensive income (loss)	\$ (121,000)	\$ 19,975	\$ 54,465

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

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

	Common Stock		Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Total
	Shares	Amount				
<b>Balance at December 31, 2019</b>	26,786,459	27	268,059	324,722	(7,018)	585,790
Common shares issued on exercise of options and other, net of shares withheld for tax obligations	189,951	-	4,114	-	-	4,114
Stock-based compensation expense	-	-	14,673	-	-	14,673
Repurchases of Common Stock	(199,614)	-	(1,998)	(12,688)	-	(14,686)
Net income				50,867		50,867
<i>Other comprehensive income</i>						
Foreign currency translation adjustment	-	-	-	-	3,598	3,598
Comprehensive income						54,465
<b>Balance at December 31, 2020</b>	<u>26,776,796</u>	<u>\$ 27</u>	<u>\$ 284,848</u>	<u>\$ 362,901</u>	<u>\$ (3,420)</u>	<u>\$ 644,356</u>
Common shares issued on exercise of options and other, net of shares withheld for tax obligations	176,736	-	1,637	-	-	1,637
Common shares issued for Hubs acquisition	863,995	1	166,708	-	-	166,709
Stock-based compensation expense	-	-	19,095	-	-	19,095
Repurchases of Common Stock	(351,582)	-	(3,740)	(19,539)	-	(23,279)
Net income	-	-	-	33,372	-	33,372
<i>Other comprehensive income</i>						
Foreign currency translation adjustment	-	-	-	-	(13,278)	(13,278)
Net unrealized gains (losses) on investments in securities	-	-	-	-	(119)	(119)
Comprehensive income						19,975
<b>Balance at December 31, 2021</b>	<u>27,465,945</u>	<u>\$ 28</u>	<u>\$ 468,548</u>	<u>\$ 376,734</u>	<u>\$ (16,817)</u>	<u>\$ 828,493</u>
Common shares issued on exercise of options and other, net of shares withheld for tax obligations	279,603	-	2,269	-	-	2,269
Stock-based compensation expense	-	-	17,545	-	-	17,545
Repurchases of Common Stock	(857,123)	(1)	(14,622)	(15,036)	-	(29,659)
Net loss	-	-	-	(103,462)	-	(103,462)
<i>Other comprehensive loss</i>						
Foreign currency translation adjustment	-	-	-	-	(16,278)	(16,278)
Net unrealized gains (losses) on investments in securities	-	-	-	-	(1,260)	(1,260)
Comprehensive loss						(121,000)
<b>Balance at December 31, 2022</b>	<u>26,888,425</u>	<u>\$ 27</u>	<u>\$ 473,740</u>	<u>\$ 258,236</u>	<u>\$ (34,355)</u>	<u>\$ 697,648</u>

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,		
	2022	2021	2020
<b>Operating activities</b>			
Net (loss) income	\$ (103,462)	\$ 33,372	\$ 50,867
Adjustments to reconcile net (loss) income to net cash provided by operating activities:			
Depreciation and amortization	39,425	40,488	32,594
Stock-based compensation expense	17,545	19,095	14,673
Deferred taxes	(9,499)	339	7,577
Changes in fair value of contingent consideration	-	(13,253)	-
Loss on impairment of goodwill	118,008	-	-
Impairments related to closure of Japan business	2,842	-	-
Gain on disposal of property and equipment	(1,211)	-	-
Other	35	842	79
Changes in operating assets and liabilities, net of acquisitions:			
Accounts receivable	1,632	(20,112)	(91)
Inventories	(310)	(2,390)	(662)
Prepaid expenses and other	(2,081)	64	(1,680)
Income taxes	(2,681)	(774)	(1,960)
Accounts payable	1,375	4,654	1,492
Accrued liabilities and other	461	(7,083)	4,080
Net cash provided by operating activities	<u>62,079</u>	<u>55,242</u>	<u>106,969</u>
<b>Investing activities</b>			
Purchases of property, equipment and other capital assets	(21,686)	(34,209)	(47,010)
Proceeds from sales of property, equipment and other capital assets	4,108	-	-
Cash used for acquisitions, net of cash acquired	-	(127,413)	-
Purchases of other assets and investments	-	-	(3,000)
Purchases of marketable securities	(46,872)	(16,159)	(113,200)
Proceeds from sales of marketable securities	1,998	64,913	-
Proceeds from maturities of marketable securities	19,360	18,204	67,737
Net cash used in investing activities	<u>(43,092)</u>	<u>(94,664)</u>	<u>(95,473)</u>
<b>Financing activities</b>			
Proceeds from issuance of common stock from equity plans	3,950	5,862	7,557
Purchases of shares withheld for tax obligations	(1,682)	(4,225)	(3,443)
Repurchases of common stock	(29,659)	(23,279)	(14,686)
Principal repayments of finance lease obligations	(531)	(552)	(154)
Other	-	(4)	-
Net cash used in financing activities	<u>(27,922)</u>	<u>(22,198)</u>	<u>(10,726)</u>
Effect of exchange rate changes on cash and cash equivalents	(436)	(54)	1,608
<b>Net (decrease) increase in cash and cash equivalents</b>	<u>(9,371)</u>	<u>(61,674)</u>	<u>2,378</u>
Cash and cash equivalents, beginning of period	65,929	127,603	125,225
<b>Cash and cash equivalents, end of period</b>	<u>\$ 56,558</u>	<u>\$ 65,929</u>	<u>\$ 127,603</u>
<b>Supplemental cash flow disclosure</b>			
Cash paid for interest	\$ 101	\$ 28	\$ 23
Cash paid for taxes	\$ 19,160	\$ 7,583	\$ 5,650

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 a digital manufacturer of custom prototypes and on-demand production parts. The Company utilizes injection molding, computer numerical control (CNC) machining, 3D printing and sheet metal fabrication to manufacture custom parts for its customers. The Company's customers conduct nearly all of their business over the internet. The Company targets its 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. In addition, the Company serves procurement and supply chain professionals seeking to manufacture custom parts on-demand. The Company has established operations in the United States, Europe and Japan. The Company believes the United States and Europe are two of the largest geographic markets where product developers and engineers are located. On May 27, 2022, the Company's board of directors approved a plan for the closure of the Company's manufacturing facility in Japan and announced an intention to cease operations in the region. Through the acquisition of Hubs in 2021, the Company is able to provide its customers access to a global network of premium manufacturing partners who reside across North America, Europe and Asia, complementing its in-house manufacturing. Proto Labs, Inc. is headquartered in Maple Plain, Minnesota. The Company's subsidiaries are:

Name	Location
PL-US International LLC	United States
Hubs Manufacturing Inc.	United States
3D Hubs Manufacturing LLC	United States
Proto Labs Ltd.	United Kingdom
PL International Holdings, UK, Ltd.	United Kingdom
PL Euro Services Limited	United Kingdom
Proto Labs GmbH	Germany
Proto Labs Tooling GmbH	Germany
3D Hubs B.V.	Netherlands
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 (loss) income*

Components of comprehensive (loss) income include net (loss) income, foreign currency translation adjustments and net unrealized gains and losses on investments in securities. Comprehensive (loss) 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 are categorized as available-for-sale and are recorded at fair value. Management determines the appropriate classification of debt securities at the time of purchase and reevaluates such designation as of each balance sheet date. 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.

**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 and net realizable value using the standard 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.

The Company follows ASC 350-40, *Internal-Use Software*, in accounting for internally developed software.

**Proto Labs, Inc.**  
**Notes to Consolidated Financial Statements**

**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 allocated to the Company's reporting units, which are determined by the discrete financial information available for the component and whether it is regularly reviewed by segment management. The Company's reporting units are the United States and Europe. Goodwill is not amortized.

Goodwill is tested for impairment annually as of the first day of the fourth quarter, 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. The quantitative impairment test requires judgment, including the identification of reporting units, the assignment of assets, liabilities and goodwill to reporting units, and the determination of fair value of each reporting unit. The impairment test requires the comparison of the fair value of each reporting unit with its carrying amount, including goodwill. In performing the impairment test, the Company determined the fair value of its reporting units through the income approach by using discounted cash flow (DCF) analyses. Determining fair value requires the Company to make judgments about appropriate discount rates, perpetual growth rates and the amount and timing of expected future cash flows. The cash flows employed in the DCF analysis for each reporting unit are based on the reporting unit's budget, long-term business plan and recent operating performance. Discount rate assumptions are based on an assessment of the risk inherent in the future cash flows of the respective reporting unit and market conditions. Given the inherent uncertainty in determining the assumptions underlying a DCF analysis, actual results may differ from those used in the Company's valuations. In assessing the reasonableness of the determined fair values, the Company also reconciled the aggregate determined fair value of the Company to the Company's market capitalization, which, at the date of its 2022 impairment test, included a 9 percent control discount. Significant assumptions used in the DCF analysis included forecasted revenue and related revenue growth rate, gross margins rate, operating expenses as a percentage of revenue rate and weighted-average cost of capital. As a result of the analyses, a \$118.0 million impairment related to the Europe reporting unit was identified, which represents a write-off of all Europe goodwill.

**Capitalized Software Costs**

The Company follows ASC 350-40, *Intangibles – Goodwill and Other; Internal-Use Software*, in accounting for internally developed software. Costs for internal use software are evaluated by project and capitalized where appropriate.

**Other Intangible Assets**

Other intangible assets include software technology, customer relationships and other intangible assets acquired from other independent parties. Other intangible assets with a definite life are amortized over a period ranging from two to 12 years on a straight line basis, and 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 indicate that an impairment may exist, 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 for its internal and outsourced manufacturing operations in accordance with ASC 606, *Revenue from Contracts with Customers*. The Company manufactures custom parts to specific customer orders that have no alternative use to the Company, and the Company believes there is a legally enforceable right to payment for performance completed to date on internally and outsourced manufactured parts. For manufactured parts that meet these two criteria, the Company will recognize revenue over time. Revenue is recognized over time using the input method based on time in production as a percentage of total estimated production time to measure progress toward satisfying performance obligations using the estimated total time necessary to complete the parts per the customer's order and an estimate of inventory and production costs incurred to date. The input method requires an analysis of the incurred time in production and an estimate of the total time necessary to complete the total parts per the customer's order. The majority of the Company's injection molding contracts have multiple performance obligations including one obligation to produce the mold and a second obligation to produce parts. For injection molding contracts with multiple performance obligations, the Company allocates revenue to each performance obligation based on its relative standalone selling price. The Company generally determines standalone selling price based on the price charged to customers.

**Leases**

The Company accounts for leases in accordance with ASC 842, *Leases*, which requires the balance sheet recognition of lease assets and lease liabilities by lessees for those leases classified as operating and finance leases. The Company determines if an arrangement is a lease at inception. Operating leases are included in operating lease assets, current operating lease liabilities and long-term operating lease liabilities in the Consolidated Balance Sheets and are recognized based on the present value of lease payments over the lease term at the commencement date. Finance leases are included in finance lease assets, current finance lease liabilities and long-term finance lease liabilities in the Consolidated Balance Sheets and are recognized based on the present value of lease payments over the lease term at commencement date. The majority of the Company's leases do not provide an implicit rate of return, therefore, the Company uses its incremental borrowing rate based on the information available at commencement date in determining the present value of lease payments. Lease agreements that contain non-lease components, with the exception of certain real estate leases, are accounted for as a single lease component.

The Company has operating leases for office space, manufacturing facilities and certain company vehicles and equipment and finance leases for certain company equipment and manufacturing facilities. The leases have remaining lease terms of one year to nine years. Leases with an initial term of 12 months or less are not recorded on the balance sheet; we recognize lease expense for these leases on a straight-line basis over the lease term. For purposes of calculating operating lease liabilities, lease terms may be deemed to include options to extend or terminate the lease when it is reasonably certain that the Company will exercise that option. As of December 31, 2022, the operating lease liability does not include any options to extend or terminate leases.

**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 are not at a level of more likely than not to 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. The Company recognizes the effect of income tax positions only if sustaining those positions is more likely than not. The Company records penalties and interest related to unrecognized tax benefits in income taxes in the Company's Consolidated Statements of Income.

**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 accounts for forfeitures as they occur. 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 \$11.8 million, \$11.6 million and \$11.5 million for the years ended December 31, 2022, 2021 and 2020, 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, enhancements of existing product lines, development of software for internal use, maintenance of internally developed software, quality assurance and testing. Costs for internal use software are evaluated by project and capitalized where appropriate under ASC 350-40, *Intangibles - Goodwill and Other, Internal-Use Software*. Research and development costs were approximately \$38.2 million, \$44.2 million and \$36.9 million for the years ended December 31, 2022, 2021 and 2020, 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.

**Recently adopted accounting pronouncements**

The Company did not recently adopt any accounting pronouncements that had a material impact on the Company's Consolidated Financial Statements. There are no pending accounting pronouncements that are expected to have a material impact on the Company's Consolidated Financial Statements.

**Proto Labs, Inc.**  
**Notes to Consolidated Financial Statements**

**Note 3 – Revenue**

The Company accounts for revenue in accordance with ASC 606, *Revenue from Contracts with Customers*. The Company provides quality, quick-turn prototyping and on-demand manufacturing services. As a result, the majority of revenue recognized in a reporting period is based on completed, invoiced contracts.

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer, and is the unit of account in ASC 606. The majority of the Company's CNC machining, 3D printing, and sheet metal contracts have a single performance obligation. The majority of the Company's injection molding contracts have multiple performance obligations including one obligation to produce the mold and a second obligation to produce parts. For injection molding contracts with multiple performance obligations, we allocate revenue to each performance obligation based on its relative standalone selling price. We generally determine standalone selling price based on the price charged to customers.

The Company manufactures parts that have no alternative use to the Company since the parts are custom made to specific customer orders, and the Company believes there is a legally enforceable right to payment for performance completed to date on these manufactured parts. For manufactured parts that meet these two criteria, the Company will recognize revenue over time. Revenue is recognized over time using the input method based on time in production as a percentage of total estimated production time to measure progress toward satisfying performance obligations using the estimated total time necessary to complete the parts per the customer's order and an estimate of inventory and production costs incurred to date. The input method requires an analysis of the incurred time in production and an estimate of the total time necessary to complete the total parts per the customer's order.

Revenue by geographic region for the years ended December 31, 2022, 2021 and 2020 was as follows:

(in thousands)	Year Ended December 31,		
	2022	2021	2020
<b>Revenue:</b>			
United States	\$ 387,399	\$ 384,458	\$ 345,708
Europe	92,770	90,399	74,796
Japan	8,229	13,241	13,891
<b>Total revenue</b>	<b>\$ 488,398</b>	<b>\$ 488,098</b>	<b>\$ 434,395</b>

Revenue by product line for the years ended December 31, 2022, 2021 and 2020 was as follows:

(in thousands)	Year Ended December 31,		
	2022	2021	2020
<b>Revenue:</b>			
Injection Molding	\$ 200,578	\$ 226,117	\$ 217,992
CNC Machining	188,372	166,811	131,587
3D Printing	78,988	72,721	62,502
Sheet Metal	19,498	20,397	18,838
Other Revenue	962	2,052	3,476
<b>Total revenue</b>	<b>\$ 488,398</b>	<b>\$ 488,098</b>	<b>\$ 434,395</b>

The Company generally expenses sales commissions when incurred because the amortization period would have been one year or less. These costs are recorded within marketing and sales expenses. The value of unsatisfied performance obligations for contracts with an original expected length of one year or less is not material.

**Proto Labs, Inc.**  
**Notes to Consolidated Financial Statements**

**Note 4 – Net (Loss) Income Per Common Share**

Basic net (loss) income per share is computed based on the weighted average number of common shares outstanding. Diluted net (loss) 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. For the year ended December 31, 2022 and 2021, respectively, 197,827 and 113,043 anti-dilutive options were excluded from the calculation of diluted weighted average shares outstanding.

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

(in thousands, except share and per share amounts)	Year Ended December 31,		
	2022	2021	2020
Net (loss) income	\$ (103,462)	\$ 33,372	\$ 50,867
Basic - weighted-average shares outstanding:	27,409,838	27,617,627	26,737,425
Effect of dilutive securities:			
Employee stock options and other	-	35,472	158,932
Diluted - weighted-average shares outstanding:	27,409,838	27,653,099	26,896,357
Net (loss) income per share attributable to common shareholders:			
Basic	\$ (3.77)	\$ 1.21	\$ 1.90
Diluted	\$ (3.77)	\$ 1.21	\$ 1.89

**Proto Labs, Inc.**  
**Notes to Consolidated Financial Statements**

**Note 5 – Business Combinations**

On January 22, 2021, the Company acquired all of the outstanding shares of 3D Hubs, Inc. (Hubs), for \$294.1 million, consisting of \$127.4 million in cash and 863,995 shares of the Company's common stock valued at \$166.7 million on the closing date. The purchase agreement included additional contingent consideration of up to \$52.8 million subject to the achievement of performance-based targets during fiscal 2021 and fiscal 2022. The contingent consideration consisted of up to \$25.0 million in cash and up to 143,983 shares of the Company's common stock valued at \$27.8 million on the closing date. No contingent consideration was earned in 2021 or 2022, due to performance-based targets not being met.

Hubs is based in Amsterdam, Netherlands and is a leading online manufacturing platform that provides customers with on-demand access to a global network of premium manufacturing partners. The acquisition enhances the Company's value proposition by expanding the customer offerings, enabling the Company to more holistically serve its customers.

The fair value of the consideration paid for this acquisition has been allocated to the assets purchased and liabilities assumed based on their fair values as of the acquisition date, with any excess recorded as goodwill. The goodwill associated with the acquisition represents both the strategic and growth opportunities by significantly expanding the customer offering with a network of premium manufacturing partners. The goodwill related to the acquisition is not deductible for tax purposes. In 2022, all goodwill allocated to Europe was written off, including goodwill associated with the acquisition of Hubs.

The acquisition has been accounted for under the acquisition method of accounting in accordance with ASC 805, *Business Combinations*. The final purchase price allocation was as follows:

(in thousands)	
<b>Assets acquired:</b>	
Current assets	\$ 2,497
Intangible assets	30,770
Goodwill	280,925
Other long-term assets	1,139
Total assets acquired	<u>315,331</u>
<b>Liabilities assumed:</b>	
Current contingent consideration	7,093
Current liabilities	5,666
Long-term contingent consideration	6,507
Long-term deferred tax liabilities	1,688
Other long-term liabilities	255
Total liabilities assumed	<u>21,209</u>
Net assets acquired	<u>\$ 294,122</u>
Cash paid	\$ 133,847
Cash acquired	(6,434)
Net cash consideration	<u>127,413</u>
Equity portion of purchase price	166,709
Total purchase consideration	<u>\$ 294,122</u>

**Proto Labs, Inc.**  
**Notes to Consolidated Financial Statements**

**Note 6 – Goodwill and Other Intangible Assets**

The changes in the carrying amount of goodwill for the years ended December 31, 2022 and 2021 were as follows:

(in thousands)	Dec. 31, 2020	Goodwill acquired during 2021	Foreign currency translation adjustments during 2021	Dec. 31, 2021	Goodwill acquired (impaired) during 2022	Foreign currency translation adjustments during 2022	Dec. 31, 2022
United States	\$ 123,883	\$ 150,108	\$ -	\$ 273,991	\$ -	\$ -	\$ 273,991
Europe	4,239	130,817	(9,067)	125,989	(118,008)	(7,981)	-
Japan	630	-	-	630	(630)	-	-
Total goodwill	<u>\$ 128,752</u>	<u>\$ 280,925</u>	<u>\$ (9,067)</u>	<u>\$ 400,610</u>	<u>\$ (118,638)</u>	<u>\$ (7,981)</u>	<u>\$ 273,991</u>

Goodwill decreased \$126.6 million for the year ended December 31, 2022 as a result of impairments related to our Europe and Japan reporting units. Goodwill increased \$280.9 million for the year ended December 31, 2021 as a result of our acquisition of Hubs. Goodwill has been allocated to the acquired Hubs entities consisting of goodwill of €106.5 million in Europe and \$150.1 million in the United States as of the date of the acquisition. The Euro denominated goodwill is translated at the end of each period using the current exchange rates resulting in a foreign currency translation adjustment that is recorded as a component of Other Comprehensive Income.

Intangible assets other than goodwill for the years ended December 31, 2022 and 2021 were as follows:

(in thousands)	Year Ended December 31, 2022			Year Ended December 31, 2021			Useful Life (in years)	Weighted Average Useful Life Remaining (in years)
	Gross	Accumulated Amortization	Net	Gross	Accumulated Amortization	Net		
Marketing assets	\$930	\$(806)	\$124	\$930	\$(713)	\$217	10.0	1.3
Non-compete agreement	828	(487)	\$341	842	(363)	479	2.0 - 5.0	2.1
Software technology	13,229	(6,383)	\$6,846	13,229	(5,014)	8,215	10.0	5.5
Software platform	26,054	(4,337)	\$21,717	26,725	(2,262)	24,463	12.0	10.1
Tradenames	350	(227)	\$123	359	(114)	245	3.0	1.1
Customer relationships	12,197	(10,098)	\$2,099	12,252	(7,873)	4,379	3.0 - 9.0	0.8
Total intangible assets	<u>\$ 53,588</u>	<u>\$ (22,338)</u>	<u>\$ 31,250</u>	<u>\$ 54,337</u>	<u>\$ (16,339)</u>	<u>\$ 37,998</u>		

Amortization expense for intangible assets for the years ended December 31, 2022, 2021 and 2020 was \$6.0 million, \$6.2 million and \$3.0 million, respectively. The Euro denominated intangible assets are translated at the end of each period using the current exchange rates resulting in a foreign currency translation adjustment that is recorded as a component of Other Comprehensive Income. For the years ended December 31, 2022 and 2021, the foreign currency translation adjustment was \$1.7 million and \$0.9 million, respectively. There were no foreign currency translation adjustment for the year ended December 31, 2020.

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

(in thousands)	Estimated Amortization Expense
2023	\$ 5,884
2024	3,732
2025	3,634
2026	3,532
2027	3,523
Thereafter	10,945
Total estimated amortization expense	<u>\$ 31,250</u>

**Proto Labs, Inc.**  
**Notes to Consolidated Financial Statements**

**Note 7 – Fair Value Measurements**

ASC 820, *Fair Value Measurement* (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 assets and liabilities that are required to be measured or disclosed at fair value on a recurring basis include cash and cash equivalents and marketable securities. The Company's cash consists of bank deposits. The Company's cash equivalents measured at fair value consist of money market mutual funds. The Company determines the fair value of these investments using Level 1 inputs. The Company's marketable securities consist of short-term and long-term agency, municipal, corporate and other debt securities. Fair value for the corporate debt securities is primarily determined based on quoted market prices (Level 1). Fair values for the U.S. municipal securities, U.S. government agency securities, certificates of deposit and U.S. treasury securities are primarily determined using dealer quotes or quoted market prices for similar securities (Level 2).

The following tables summarizes financial assets as of December 31, 2022 and 2021 measured at fair value on a recurring basis:

(in thousands)	December 31, 2022			December 31, 2021		
	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
<b>Financial Assets:</b>						
Cash and cash equivalents, excluding money market mutual fund	\$ 38,862	\$ -	\$ -	\$ 65,637	\$ -	\$ -
Money market mutual fund	17,696	-	-	292	-	-
Marketable securities	9,881	40,106	-	7,602	18,318	-
<b>Total</b>	<b>\$ 66,439</b>	<b>\$ 40,106</b>	<b>\$ -</b>	<b>\$ 73,531</b>	<b>\$ 18,318</b>	<b>\$ -</b>

**Proto Labs, Inc.**  
**Notes to Consolidated Financial Statements**

**Note 8 – Marketable Securities**

The Company invests in short-term and long-term agency, municipal, corporate and other debt securities. As of December 31, 2022 and 2021, the securities are categorized as available-for-sale and are recorded at fair value.

Information regarding the Company's short-term and long-term marketable securities as of December 31, 2022 and 2021 is as follows:

(in thousands)	December 31, 2022			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
U.S. government agency securities	\$ 25,275	\$ -	\$ (750)	\$ 24,525
Corporate debt securities	9,578	-	(205)	9,373
U.S. municipal securities	15,574	-	(417)	15,157
Certificates of deposit/time deposits	939	-	(7)	932
<b>Total marketable securities</b>	<b>\$ 51,366</b>	<b>\$ -</b>	<b>\$ (1,379)</b>	<b>\$ 49,987</b>

(in thousands)	December 31, 2021			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
U.S. government agency securities	\$ 2,500	\$ -	\$ (12)	\$ 2,488
Corporate debt securities	9,303	-	(44)	9,259
U.S. municipal securities	12,549	-	(70)	12,479
Certificates of deposit/time deposits	1,687	7	-	1,694
<b>Total marketable securities</b>	<b>\$ 26,039</b>	<b>\$ 7</b>	<b>\$ (126)</b>	<b>\$ 25,920</b>

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

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, 2022 balance of available-for-sale debt securities by contractual maturity is shown in the following table at fair value. Actual maturities may differ from contractual maturities because the issuers of the securities may have the right to prepay obligations without prepayment penalties.

(in thousands)	<b>December 31,</b>	
	<b>2022</b>	
Due in one year or less	\$	23,568
Due after one year through five years		26,419
Total marketable securities	\$	<u>49,987</u>

**Note 9 – Property and Equipment**

Property and equipment consists of the following:

(in thousands)	<b>December 31,</b>	
	<b>2022</b>	<b>2021</b>
Land	\$ 14,153	\$ 15,009
Buildings and improvements	105,492	107,241
Machinery and equipment	228,654	234,900
Computer hardware and software	82,302	81,889
Leasehold improvements	4,548	8,373
Construction in progress	22,674	14,489
Total	457,823	461,901
Accumulated depreciation and amortization	(200,038)	(181,555)
Property and equipment, net	<u>\$ 257,785</u>	<u>\$ 280,346</u>

Depreciation expense for the years ended December 31, 2022, 2021 and 2020 was \$33.4 million, \$34.3 million and \$29.6 million, respectively.

**Note 10 – Inventory**

Inventory consists primarily of raw materials, which are recorded at the lower of cost and net realizable value using the standard 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:

(in thousands)	<b>December 31,</b>	
	<b>2022</b>	<b>2021</b>
Total inventory	13,965	13,474
Allowance for obsolescence	(387)	(313)
Inventory, net of allowance	<u>\$ 13,578</u>	<u>\$ 13,161</u>

**Proto Labs, Inc.**  
**Notes to Consolidated Financial Statements**

**Note 11 – Financing Obligations**

The Company had no financing obligations as of December 31, 2022 and 2021.

**Note 12 – 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 \$3.9 million, \$3.7 million and \$3.3 million for the years ended December 31, 2022, 2021 and 2020, respectively.

The Company also sponsors a defined contribution retirement plan that covers the employees in the United Kingdom. Total employer contributions were approximately \$0.5 million, \$0.4 million and \$0.5 million for the years ended December 31, 2022, 2021 and 2020, respectively.

**Note 13 – Stock-Based Compensation**

Under the Company's 2012 Long-Term Incentive Plan, as amended (the 2012 Plan), the Company had the ability to grant stock options, stock appreciation rights (SARs), restricted stock, restricted stock units, other stock-based awards and cash incentive awards through February 23, 2022. On July 8, 2022, the board of directors approved the Proto Labs, Inc. 2022 Long-Term Incentive Plan (the 2022 Plan), which was approved by the Company's shareholders at a Special Meeting of Shareholders on August 29, 2022. No awards were granted from February 23, 2022 to August 29, 2022. Awards outstanding under the 2012 Plan as of August 29, 2022 will continue to be subject to the terms of the 2012 Plan, but if those awards subsequently expire, are forfeited or cancelled or are settled in cash, the shares subject to those awards will become available for awards under the 2022 Plan. Under the 2022 Plan, the Company has the ability to grant stock options, stock appreciation rights (SARs), restricted stock, restricted stock units, other stock-based awards and cash incentive awards. Awards under the 2022 Plan have a maximum term of ten years from the date of grant. The compensation committee 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 2022 Plan generally may not be less than the fair market value of a share of our common stock on the date of the grant.

**Proto Labs, Inc.**  
**Notes to Consolidated Financial Statements**

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 142,982 and 67,729 shares of common stock under the ESPP at an average exercise price of \$27.09 and \$61.96 during 2022 and 2021, respectively. As of December 31, 2022, 915,884 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 and stock price volatility.

The expected term of stock options is estimated from the vesting period of the award and represents the weighted average period that the Company's stock options are expected to be outstanding. The Company estimates 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. The Company accounts for forfeitures as they occur. The Company recognizes 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, 2022, 2021 and 2020, respectively:

(in thousands)	Year Ended December 31,		
	2022	2021	2020
Stock options and other	\$ 16,103	\$ 17,553	\$ 13,327
Employee stock purchase plan	1,442	1,542	1,346
<b>Total stock-based compensation expense</b>	<b>\$ 17,545</b>	<b>\$ 19,095</b>	<b>\$ 14,673</b>
Cost of revenue	\$ 2,172	\$ 2,595	\$ 2,451
Operating expenses:			
Marketing and sales	3,295	3,736	3,121
Research and development	2,189	2,833	2,440
General and administrative	9,889	9,931	6,661
<b>Total stock-based compensation expense</b>	<b>\$ 17,545</b>	<b>\$ 19,095</b>	<b>\$ 14,673</b>

**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, 2022, 2021 and 2020:

	Year Ended December 31,		
	2022	2021	2020
Risk-free interest rate	1.94 - 3.40%	0.80 - 1.12%	0.50 - 1.47%
Expected life (years)	6.25	6.25	6.25
Expected volatility	45.95 - 46.03%	45.28 - 45.53%	42.40 - 43.83%
Expected dividend yield	0%	0%	0%
Weighted average grant date fair value	\$23.11	\$128.14	\$45.32

The following table summarizes stock option activity and the weighted average exercise price for the years ended December 31, 2022, 2021 and 2020:

	Stock Options	Weighted-Average Exercise Price
Options outstanding at January 1, 2020	276,266	\$ 72.38
Granted	60,065	105.79
Exercised	(68,958)	57.00
Cancelled	(37,842)	67.92
Options outstanding at December 31, 2020	229,531	86.46
Granted	57,901	128.14
Exercised	(28,991)	58.78
Cancelled	(25,057)	109.31
Options outstanding at December 31, 2021	233,384	97.78
Granted	118,434	48.24
Exercised	(3,114)	30.58
Cancelled	(84,712)	89.32
Options outstanding at December 31, 2022	263,992	\$ 79.07
Exercisable at December 31, 2022	102,692	\$ 90.22

The outstanding options have a term of 10 years. For employees, options that have been granted become exercisable ratably over the vesting period, which is generally a four-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, 2022, 2021 and 2020, was \$0.0 million, \$3.8 million and \$5.4 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, 2022, the weighted-average remaining contractual term was 7.2 years and the aggregate intrinsic value was \$0.0 million. For options exercisable at December 31, 2022, the weighted-average remaining contractual term was 4.7 years and the aggregate intrinsic value was \$0.0 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, 2022:

Range of Exercise Prices	Options Outstanding, Vested and Expected to Vest			Options Exercisable	
	Number Outstanding	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price (\$)	Number Exercisable	Weighted Average Exercise Price (\$)
\$39.11 to \$66.87	137,829	7.63	49.84	32,808	56.53
\$66.88 to \$96.20	37,608	6.72	89.37	17,016	82.08
\$96.21 to \$180.46	88,555	6.81	120.17	52,868	113.74

The fair value of share-based payment transactions is recognized in the Consolidated Statements of Comprehensive Income. As of December 31, 2022, there was \$3.9 million of total unrecognized compensation cost related to unvested stock options, which is expected to be recognized over a weighted average period of 2.6 years. The total fair value of options vested was \$2.3 million, \$2.1 million and \$1.8 million for the years ended December 31, 2022, 2021 and 2020, 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 four-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, 2022, 2021 and 2020:

	Restricted Stock Awards	Weighted-Average Grant Date Fair Value Per Share
Restricted stock at January 1, 2020	314,973	\$ 89.55
Granted	108,179	111.76
Restrictions lapsed	(101,941)	84.70
Forfeited	(14,012)	94.24
Restricted stock at December 31, 2020	307,199	98.87
Granted	205,996	123.61
Restrictions lapsed	(115,908)	91.26
Forfeited	(53,505)	128.05
Restricted stock at December 31, 2021	343,782	111.79
Granted	315,432	42.03
Restrictions lapsed	(130,452)	101.32
Forfeited	(50,166)	96.48
Restricted stock at December 31, 2022	478,596	\$ 70.36

**Proto Labs, Inc.**  
**Notes to Consolidated Financial Statements**

As of December 31, 2022, there was \$21.1 million of unrecognized compensation expense related to non-vested restricted stock, which is expected to be recognized over a weighted-average period of 2.4 years.

**Performance Stock**

Performance stock units (PSUs) are expressed in terms of a target number of PSUs, with anywhere between 0 percent and 200 percent of that target number capable of being earned and vesting at the end of a three-year performance period depending on the Company's performance in the final year of the performance period and the award recipient's continued employment. The Company's outstanding PSUs at December 31, 2022 are based on market conditions and the related compensation cost is based on the fair value at grant date calculated using a Monte Carlo pricing model.

The following table summarizes performance stock activity for the years ended December 31, 2022, 2021 and 2020:

	Performance Stock Awards	Weighted- Average Grant Date Fair Value Per Share
Performance stock at January 1, 2020	9,383	\$ 58.35
Granted	19,956	118.66
Restrictions lapsed	(7,113)	58.35
Performance change	-	-
Forfeited	(2,270)	58.35
Performance stock at December 31, 2020	19,956	118.66
Granted	15,078	203.64
Restrictions lapsed	-	-
Performance change	(10,366)	192.95
Forfeited	(7,829)	113.91
Performance stock at December 31, 2021	16,839	115.56
Granted	35,697	96.71
Restrictions lapsed	-	-
Performance change	(13,156)	99.59
Forfeited	(3,578)	121.79
Performance stock at December 31, 2022	35,802	\$ 77.91

As of December 31, 2022, there was \$2.5 million of unrecognized compensation expense related to non-vested performance stock, which is expected to be recognized over a weighted-average period of 2.0 years.

**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, 2022, 2021 and 2020:

	Year Ended December 31,		
	2022	2021	2020
Risk-free interest rate	0.17 - 4.60%	0.06 - 0.17%	0.12 - 0.17%
Expected life (months)	6.00	6.00	6.00
Expected volatility	47.05 - 67.84%	53.44 - 65.53%	50.85 - 59.99%
Expected dividend yield	0%	0%	0%

**Proto Labs, Inc.**  
**Notes to Consolidated Financial Statements**

**Note 14 – Leases**

Supplemental balance sheet information related to leases was as follows:

(in thousands)	December 31,	
	2022	2021
Operating lease assets	\$ 3,844	\$ 5,578
Current operating lease liabilities	\$ 1,561	\$ 3,298
Long-term operating lease liabilities	2,255	2,245
Total operating lease liabilities	<u>\$ 3,816</u>	<u>\$ 5,543</u>
Finance lease assets	\$ 17,532	\$ 1,898
Current finance lease liabilities	\$ 17,537	\$ 550
Long-term finance lease liabilities	-	1,351
Total finance lease liabilities	<u>\$ 17,537</u>	<u>\$ 1,901</u>

Lease expense is recognized on a straight-line basis over the lease term, with variable payments recognized in the period those payments are incurred. The components of lease expense for the periods reported were as follows:

(in thousands)	Twelve Months Ended December 31,	
	2022	2021
Operating lease cost	\$ 3,002	\$ 3,391
Finance lease cost:		
Amortization of right-of-use assets	\$ 532	\$ 498
Interest on lease obligations	\$ 95	\$ 9
Variable lease cost	560	719
Total lease cost	<u>\$ 4,189</u>	<u>\$ 4,617</u>

**Proto Labs, Inc.**  
**Notes to Consolidated Financial Statements**

Maturities of operating and finance lease liabilities as of December 31, 2022 were as follows:

(in thousands)	<b>Operating Leases</b>		<b>Finance Leases</b>	
<b>Year Ending December 31,</b>				
2023	\$	1,584	\$	18,489
2024		1,088		-
2025		883		-
2026		344		-
2027		-		-
After 2028		-		-
Total future minimum lease payments		3,899		18,489
Less interest		(83)		(952)
Present value of lease liabilities	\$	<u>3,816</u>	\$	<u>17,537</u>

As of December 31, 2022, we have no operating or finance leases that have not yet commenced.

Weighted average remaining lease term and discount rate was as follows:

	<b>December 31,</b>	
	<b>2022</b>	<b>2021</b>
Weighted Average Remaining Lease Term - operating leases (years)	2.9	3.1
Weighted Average Remaining Lease Term - finance leases (years)	36.0	1.5
Weighted Average Discount Rate - operating leases	1.6%	1.6%
Weighted Average Discount Rate - finance leases	5.9%	0.4%

Supplemental cash flow information related to leases was as follows:

(in thousands)	<b>Twelve Months Ended December 31,</b>	
	<b>2022</b>	<b>2021</b>
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	\$3,778	\$10,477
Operating cash flows from finance leases	\$95	\$9
Financing cash flows from finance leases	\$531	\$552
Lease assets obtained in exchange for new operating lease liabilities	\$898	\$5,293
Lease assets obtained in exchange for new financing lease liabilities	\$16,167	-

**Proto Labs, Inc.**  
**Notes to Consolidated Financial Statements**

**Note 15 – Accumulated Other Comprehensive Loss**

Other comprehensive loss is comprised of foreign currency translation adjustments and net unrealized gains (losses) on investments in securities. The following table presents the changes in accumulated other comprehensive loss balances for the years ending December 31, 2022, 2021 and 2020, respectively:

(in thousands)	Year Ended December 31,		
	2022	2021	2020
Balance at beginning of period	\$ (16,817)	\$ (3,420)	\$ (7,018)
<i>Foreign currency translation adjustments</i>			
Other comprehensive (loss) income before reclassifications	(16,278)	(13,278)	3,598
Amounts reclassified from accumulated other comprehensive income (loss)	-	-	-
Net current-period other comprehensive (loss) income	(16,278)	(13,278)	3,598
<i>Net unrealized gains (losses) on investments in securities</i>			
Other comprehensive (loss) income before reclassifications	(1,260)	(119)	-
Amounts reclassified from accumulated other comprehensive income (loss)	-	-	-
Net current-period other comprehensive (loss) income	(1,260)	(119)	-
Balance at end of period	\$ (34,355)	\$ (16,817)	\$ (3,420)

**Note 16 – 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, 2022, 2021 and 2020, the Company recorded an income tax provision of \$5.6 million, \$6.8 million and \$12.1 million, respectively. The effective income tax rate for the years ended December 31, 2022, 2021 and 2020 was (5.7) percent, 17.0 percent and 19.2 percent, respectively.

**Proto Labs, Inc.**  
**Notes to Consolidated Financial Statements**

The effective tax rate decreased by 22.7% for the year ended December 31, 2022 when compared to 2021 primarily due to the tax rate impact of the goodwill impairment and a benefit from the decrease in the tax liability for uncertain tax positions. These benefits were partially offset by an increase in the valuation allowances on losses from foreign operations.

The Coronavirus Aid, Relief, and Economic Security (CARES) Act was signed into law on March 27, 2020. The CARES Act was meant to infuse companies with various income and payroll tax cash benefits to ease the impact of the pandemic. A technical correction to the Tax Cuts and Jobs Act of 2017 was included in the CARES Act allowing qualified improvement property to claim bonus depreciation for respective assets placed in service in 2018 and 2019. The impact of the CARES Act to the Company was a \$2.9 million reduction to income taxes payable and a corresponding increase to deferred tax liability for the year ended December 31, 2020. In addition, the Company elected to defer deposits of the employer portion of the Social Security tax for the quarter ended March 31, 2020 through the quarter ended December 31, 2020. The Social Security taxes deferred in 2020 were paid in 2021.

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:

(in thousands)	Year Ended December 31,		
	2022	2021	2020
Domestic	\$ 33,731	\$ 42,449	\$ 58,551
Foreign	(131,608)	(2,265)	4,394
<b>Total</b>	<b>\$ (97,877)</b>	<b>\$ 40,184</b>	<b>\$ 62,945</b>

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

(in thousands)	Year Ended December 31,		
	2022	2021	2020
<b>Current:</b>			
Federal	\$ 15,366	\$ 5,552	\$ 2,128
State	(393)	975	1,136
Foreign	(99)	(64)	1,241
<b>Deferred</b>			
Federal	(9,159)	(377)	6,904
State	(723)	(814)	(431)
Foreign	(4,641)	(1,181)	210
Valuation Allowance	5,234	2,721	890
<b>Total</b>	<b>\$ 5,585</b>	<b>\$ 6,812</b>	<b>\$ 12,078</b>

**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,		
	2022	2021	2020
Federal tax statutory rate	21.0%	21.0%	21.0%
State tax (net of federal benefit)	(0.8)	2.1	2.1
Share based compensation	(2.1)	(2.3)	(1.3)
Valuation allowance against deferred tax assets	(5.0)	8.9	2.0
Goodwill impairment	(24.4)	-	-
Contingent consideration reduction	-	(7.0)	-
Research and development credit	1.2	(4.0)	(3.7)
Foreign rate differential	2.9	(2.2)	(0.8)
Tax reserves	1.0	(1.0)	1.4
Provision to return difference	-	(0.7)	(1.4)
Miscellaneous	0.5	2.2	(0.1)
Total	<u>(5.7%)</u>	<u>17.0%</u>	<u>19.2%</u>

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

(in thousands)	December 31,	
	2022	2021
<b>Deferred tax assets:</b>		
Accrued expenses	\$ 2,254	\$ 2,511
Section 174 expenses	8,119	-
Leases	4,822	1,830
Warrants and stock options	4,087	4,271
Inventories	198	205
Research and development credit	2,374	2,126
Other assets	838	1,111
Net operating loss	16,586	14,046
Less valuation allowance	(17,562)	(13,999)
Total deferred tax assets	<u>21,716</u>	<u>12,101</u>
<b>Deferred tax liabilities:</b>		
Depreciation	(29,397)	(31,897)
Goodwill	(10,716)	(9,872)
Intangible assets	(3,103)	(4,394)
Leases	(4,822)	(1,830)
Total deferred tax liabilities	<u>(48,038)</u>	<u>(47,993)</u>
Net deferred tax liability	<u>\$ (26,322)</u>	<u>\$ (35,892)</u>

The Company has recorded no U.S. deferred taxes related to the undistributed earnings of its non-U.S. subsidiaries as of December 31, 2022. 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, 2022, the Company had accumulated undistributed earnings in non-U.S. subsidiaries of \$3.6 million.

As of December 31, 2022, the Company had estimated net operating loss carry forwards of \$16.6 million for tax purposes. The net operating losses relate to operations in Japan, Germany and Netherlands. Japan losses can be carried forward for up to ten years. The remaining Japan net operating losses begin to expire at various dates between 2023 and 2032. The Company's Japan operations are taxed both by local authorities and in the U.S. Germany net operating losses may be carried forward without any time limitations but are limited to €1 million, plus 60 percent of taxable income exceeding €1 million. Netherlands net operating losses may be carried forward without any time limitations, but are limited to €1 million, plus 50 percent of taxable income exceeding €1 million.

**Proto Labs, Inc.**  
**Notes to Consolidated Financial Statements**

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 \$17.6 million and \$14.0 million at December 31, 2022 and 2021, 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 additional net operating losses generated in 2022.

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 2018.

The Company has liabilities related to unrecognized tax benefits totaling \$3.2 million and \$4.4 million at December 31, 2022 and 2021, 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 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, 2022, 2021 and 2020.

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

	December 31,	
	2022	2021
Balance at beginning of period	\$ 4,364	\$ 4,830
Additions for tax positions of current year	634	491
Additions for tax positions of prior years	23	781
Decrease related to the expiration of statutes of limitations	-	(1,738)
Reduction for tax positions of prior years	(1,785)	-
Balance at period end	<u>\$ 3,236</u>	<u>\$ 4,364</u>

**Note 17 – 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 18 – 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. The Company's reportable segments are based upon geographic region, consisting of the United States and Europe. The Corporate Unallocated and Japan category includes non-reportable segments, as well as research and development and general and administrative costs that are global in nature and that the Company does not allocate directly to its operating segments.

Revenue in the United States is derived from Injection Molding, CNC Machining, 3D Printing and Sheet Metal product lines. Revenue in 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 and lathe-turned customer parts. 3D Printing revenue consists of sales of 3D-printed parts. Sheet Metal revenue consists of sales of fabricated sheet metal parts.

**Proto Labs, Inc.**  
**Notes to Consolidated Financial Statements**

The accounting policies of the reportable segments are the same as those described in Note 2 – Summary of Significant Accounting Policies. Intercompany transactions primarily relate to intercontinental activity and have been eliminated and are excluded from the reported amounts. The difference between (loss) 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:

(in thousands)	Year Ended December 31,		
	2022	2021	2020
<b>Revenue:</b>			
United States	\$ 387,399	\$ 384,458	\$ 345,708
Europe	92,770	90,399	74,796
Japan	8,229	13,241	13,891
Total revenue	<u>\$ 488,398</u>	<u>\$ 488,098</u>	<u>\$ 434,395</u>

(in thousands)	Year Ended December 31,		
	2022	2021	2020
<b>(Loss) Income from Operations:</b>			
United States	\$ 93,176	\$ 98,001	\$ 98,762
Europe	(130,386)	730	11,707
Corporate Unallocated and Japan	(60,773)	(58,389)	(50,633)
Total (loss) income from operations	<u>\$ (97,983)</u>	<u>\$ 40,342</u>	<u>\$ 59,836</u>

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

(in thousands)	December 31,	December 31,	December 31,
	2022	2021	2020
<b>Long-lived assets:</b>			
United States	\$ 203,816	\$ 215,701	\$ 215,721
Europe	53,835	59,388	59,388
Japan	134	5,257	7,557
Total long-lived assets	<u>\$ 257,785</u>	<u>\$ 280,346</u>	<u>\$ 282,666</u>

(in thousands)	Year Ended December 31,		
	2022	2021	2020
<b>Expenditures for additions to long-lived assets:</b>			
United States	\$ 17,538	\$ 26,698	\$ 29,984
Europe	4,137	7,378	16,574
Japan	11	133	452
Total expenditures for additions to long-lived assets	<u>\$ 21,686</u>	<u>\$ 34,209</u>	<u>\$ 47,010</u>

**Proto Labs, Inc.**  
**Notes to Consolidated Financial Statements**

(in thousands)	Year Ended December 31,		
	2022	2021	2020
<b>Depreciation and Amortization:</b>			
United States	\$ 31,666	\$ 31,642	\$ 25,744
Europe	6,770	7,101	5,024
Japan	989	1,745	1,826
Total depreciation and amortization	<u>\$ 39,425</u>	<u>\$ 40,488</u>	<u>\$ 32,594</u>

**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 timeframes 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, 2022, 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.

**Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections**

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 Part I, 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 2023 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 2023 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 2023 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](http://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 2023 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 and Related Shareholder Matters**

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 2023 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 – Elements of Executive Compensation” of our 2023 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.

**Outstanding Equity Awards**

The following table summarizes, as of December 31, 2022, information about shares of our common stock that may be issued under equity compensation plans approved by shareholders and plans not approved by shareholders:

<b>Plan Category</b>	<b>Number of shares to be issued upon exercise of outstanding options, warrants and rights</b>	<b>Weighted-average exercise price of outstanding options, warrants and rights</b>	<b>Number of shares remaining available for future issuance under equity compensation plans (excluding shares in first column)</b>
Equity compensation plans approved by shareholders <sup>(1)</sup>	791,546	\$79.07	1,843,776 <sup>(2)</sup>
Equity compensation plans not approved by shareholders	None	N/A	None

(1) Includes the 2012 Long-Term Incentive Plan, the 2022 Long-Term Incentive Plan and our Employee Stock Purchase Plan.

(2) Includes 915,884 shares remaining available for issuance as of December 31, 2022 under our Employee Stock Purchase Plan.

**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 2023 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 2023 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 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.

<b>Exhibit Number</b>	<b>Description of Exhibit</b>
3.1	<a href="#">Third Amended and Restated Articles of Incorporation of Proto Labs, Inc. (incorporated by reference to Exhibit 3.2 to the Company's Registration Statement on Form S-1/A, filed on February 13, 2012).</a>
3.2	<a href="#">Articles of Amendment to Third Amended and Restated Articles of Incorporation of Proto Labs, Inc. dated May 20, 2015 (incorporated by reference to Exhibit 3.1 to the Company's Form 8-K, filed with the Commission on May 21, 2015).</a>
3.3	<a href="#">Third Amended and Restated By-Laws of Proto Labs, Inc. as amended through November 15, 2022 (incorporated by reference to Exhibit 3.2 to the Company's Form 8-K, filed on November 15, 2022).</a>
4.1	<a href="#">Form of certificate representing common shares of Proto Labs, Inc. (incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-1/A, filed on February 1, 2012).</a>
4.2	<a href="#">Description of Securities of Registrant</a>
10.1#	<a href="#">2012 Long-Term Incentive Plan, as amended as of August 5, 2015 (incorporated by reference to Exhibit 10.1 to the Company's Form 10-Q, filed on November 3, 2015).</a>
10.2#	<a href="#">Form of Incentive Stock Option Agreement under 2012 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.14 to the Company's Registration Statement on Form S-1/A, filed on February 13, 2012).</a>
10.3#	<a href="#">Form of Non-Statutory Stock Option Agreement (Directors) under 2012 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.15 to the Company's Registration Statement on Form S-1/A, filed on February 13, 2012).</a>
10.4#	<a href="#">Form of Non-Statutory Stock Option Agreement (U.S. Employees) under 2012 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.16 to the Company's Registration Statement on Form S-1/A, filed on February 13, 2012).</a>
10.5#	<a href="#">Form of Non-Statutory Stock Option Agreement (U.K. Employees) under 2012 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.17 to the Company's Registration Statement on Form S-1/A, filed on February 13, 2012).</a>
10.6#	<a href="#">Employee Stock Purchase Plan (incorporated by reference to Exhibit 10.18 to the Company's Registration Statement on Form S-1/A, filed on February 13, 2012).</a>

10.7#	<a href="#">Amended and Restated Credit Agreement, dated as of September 30, 2011, between Proto Labs, Inc. and Wells Fargo Bank, N.A. (incorporated by reference to Exhibit 10.19 to the Company's Registration Statement on Form S-1/A, filed on October 26, 2011).</a>
10.8#	<a href="#">Credit Agreement, dated November 27, 2017, by and among Proto Labs and Wells Fargo Bank, National Association (incorporated by reference to Exhibit 10.1 to the Company's Form 8-K, filed on December 1, 2017).</a>
10.9#	<a href="#">Form of U.S. Severance Agreement (incorporated by reference to Exhibit 99.1 to the Company's Form 8-K, filed on March 1, 2013).</a>
10.10#	<a href="#">Form of UK Severance Agreement (incorporated by reference to Exhibit 10.2 to the Company's Form 10-Q, filed on May 8, 2013).</a>
10.11#	<a href="#">Amended and Restated Executive Employment Agreement, dated August 1, 2019, by and between Proto Labs, Inc. and Victoria M. Holt (incorporated by reference to Exhibit 10.1 to the Company's Form 8-K, filed on August 2, 2019).</a>
10.12#	<a href="#">Form of Restricted Stock Agreement under 2012 Long-Term Incentive Plan for the initial grant to Victoria M. Holt (incorporated by reference to Exhibit 10.2 to the Company's Form 8-K, filed on February 6, 2014).</a>
10.13#	<a href="#">Form of Restricted Stock Unit Agreement under 2012 Long-Term Incentive Plan (U.S. Employees) (incorporated by reference to Exhibit 10.1 to the Company's Form 8-K, filed on February 12, 2014).</a>
10.14#	<a href="#">Form of Restricted Stock Unit Agreement under 2012 Long-Term Incentive Plan (U.K. Employees) (incorporated by reference to Exhibit 10.2 to the Company's Form 8-K, filed on February 12, 2014).</a>
10.15#	<a href="#">Form of Restricted Stock Unit Agreement under 2012 Long-Term Incentive Plan (Directors) (incorporated by reference to Exhibit 99.6 to the Company's Registration Statement on Form S-8, filed on March 3, 2014).</a>
10.16	<a href="#">Consulting Agreement, dated February 4, 2021, by and between Proto Labs, Inc. and Victoria M. Holt (incorporated by reference to Exhibit 10.2 to the Company's Form 8-K, filed on February 4, 2021).</a>
10.17#	<a href="#">Form of Performance Stock Unit Agreement under 2012 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.1 to the Company's Form 8-K, filed on February 17, 2017).</a>
10.18#	<a href="#">Form of Deferred Stock Unit Agreement under 2012 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.1 to the Company's Form 10-Q, filed on August 1, 2018).</a>

10.19#	<a href="#">Form of Executive Severance Agreement (incorporated by reference to Exhibit 99.2 to the Company's Form 8-K, filed on June 6, 2022).</a>
10.20#	<a href="#">Executive Employment Agreement, dated January 29, 2021, by and between Proto Labs, Inc. and Robert Bodor (incorporated by reference to Exhibit 10.1 to the Company's Form 8-K, filed on February 4, 2021).</a>
10.21#	<a href="#">Proto Labs, Inc. 2022 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.1 to the Company's Form 8-K, filed on August 30, 2022).</a>
10.22#	<a href="#">Form of Incentive Stock Option Agreement under the 2022 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.2 to the Company's Form 8-K, filed on August 30, 2022).</a>
10.23#	<a href="#">Form of Non-Statutory Stock Option Agreement (Directors) under the 2022 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.3 to the Company's Form 8-K, filed on August 30, 2022).</a>
10.24#	<a href="#">Form of Non-Statutory Stock Option Agreement (U.S. Employees) under the 2022 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.4 to the Company's Form 8-K, filed on August 30, 2022).</a>
10.25#	<a href="#">Form of Non-Statutory Stock Option Agreement (U.K. Employees) under the 2022 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.5 to the Company's Form 8-K, filed on August 30, 2022).</a>
10.26#	<a href="#">Form of Restricted Stock Unit Award Agreement under the 2022 Long-Term Incentive Plan (U.S. Employees) (incorporated by reference to Exhibit 10.6 to the Company's Form 8-K, filed on August 30, 2022).</a>
10.27#	<a href="#">Form of Restricted Stock Unit Award Agreement under the 2022 Long-Term Incentive Plan (U.K. Employees) (incorporated by reference to Exhibit 10.7 to the Company's Form 8-K, filed on August 30, 2022).</a>
10.28#	<a href="#">Form of Restricted Stock Unit Award Agreement under the 2022 Long-Term Incentive Plan (Directors) (incorporated by reference to Exhibit 10.8 to the Company's Form 8-K, filed on August 30, 2022).</a>
10.29#	<a href="#">Form of Performance Stock Unit Award Agreement under the 2022 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.9 to the Company's Form 8-K, filed on August 30, 2022).</a>
10.30#	<a href="#">Form of Deferred Stock Unit Award Agreement under the 2022 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.10 to the Company's Form 8-K, filed on August 30, 2022).</a>

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21.1	<a href="#">Subsidiaries of Proto Labs, Inc.</a>
23.1	<a href="#">Consent of Ernst &amp; Young LLP</a>
24.1	<a href="#">Powers of Attorney</a>
31.1	<a href="#">Certification of the Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act</a>
31.2	<a href="#">Certification of the Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act</a>
32.1*	<a href="#">Certification of the Chief Executive Officer and the Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act</a>
101.INS**	XBRL Instance Document- the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH**	Inline XBRL Taxonomy Extension Schema Document
101.CAL**	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF**	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB**	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE**	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

#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.

**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 21, 2023

/s/ Robert Bodor  
\_\_\_\_\_  
Robert Bodor  
President and Chief Executive Officer  
(Principal Executive Officer)

Date: February 21, 2023

/s/ Daniel Schumacher  
\_\_\_\_\_  
Daniel Schumacher  
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 21, 2023

/s/ Robert Bodor  
\_\_\_\_\_  
Robert Bodor  
President and Chief Executive Officer and Director  
(Principal Executive Officer)

Date: February 21, 2023

/s/ Daniel Schumacher  
\_\_\_\_\_  
Daniel Schumacher  
Chief Financial Officer  
(Principal Financial and Accounting Officer)

**Chairman of the Board of Directors:**

Archie C. Black\*

**Directors:**

Sujeet Chand\*  
Moonhie Chin\*  
Rainer Gawlick\*  
Stacy Greiner\*  
Donald G. Krantz\*  
Sven A. Wehrwein\*

\*Robert Bodor, by signing his 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 21, 2023

/s/ Robert Bodor  
\_\_\_\_\_  
Robert Bodor  
President and Chief Executive Officer  
(Principal Executive Officer)

**DESCRIPTION OF THE REGISTRANT'S SECURITIES**  
**REGISTERED PURSUANT TO SECTION 12 OF THE**  
**SECURITIES EXCHANGE ACT OF 1934**

Proto Labs, Inc. (the "Company") has common stock registered under Section 12(b) of the Securities Exchange Act of 1934 and listed on The New York Stock Exchange.

**Description of Capital Stock**

***General***

The summary of the general terms and provisions of the capital stock of the Company set forth below does not purport to be complete and is subject to and qualified by reference to the Company's Third Amended and Restated Articles of Incorporation (as amended, the "Articles") and Third Amended and Restated By-Laws (as amended, the "By-laws," and together with the Articles, the "Charter Documents"), each of which is incorporated herein by reference and attached as an exhibit to the Company's most recent Annual Report on Form 10-K filed with the Securities and Exchange Commission. For additional information, please read the Company's Charter Documents and the applicable provisions of the Minnesota Business Corporation Act (the "MBCA").

***Common Stock***

The aggregate number of shares that the Company has authority to issue is 160,000,000. The shares are classified in two classes, consisting of 10,000,000 shares of preferred stock, par value \$0.001 per share, and 150,000,000 shares of common stock, par value \$0.001 per share. The board of directors is authorized to establish one or more series of preferred stock, setting forth the designation of each such series, and fixing the relative rights and preferences of each such series.

***Voting Rights***

Each share of common stock entitles the holder to one vote with respect to each matter presented to the Company's shareholders on which the holders of common stock are entitled to vote.

***No Cumulative Voting***

No holder of common stock, or of any class or classes or of a series or series thereof, is entitled to cumulate votes for the election of directors of the Company.

***No Preemptive Rights***

Holders of common stock do not have any preemptive rights to become subscribers or purchasers of additional shares of any class of the Company's capital stock.

***Dividend Rights***

Subject to preferences that may be applicable to any outstanding series of preferred stock, the holders of the Company's common stock will receive ratably any dividends declared by the board of directors out of funds legally available for the payment of dividends. The board of directors may, at its discretion, modify or repeal the dividend policy.

***Liquidation Rights***

In the event of the Company's liquidation, dissolution or winding-up, the holders of common stock are entitled to share ratably in all assets remaining after payment of liabilities, subject to prior distribution rights of preferred stock, if any, then outstanding.

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### ***Preferred Stock***

There are no shares of preferred stock outstanding. The board has broad discretionary authority with respect to the rights of any new series of preferred stock and may establish the following with respect to the shares to be included in each series, without any vote or action of the shareholders:

- the number of shares;
- the designations, preferences and relative rights, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences; and
- any qualifications, limitations or restrictions.

We believe that the ability of the board to issue one or more series of preferred stock will provide us with flexibility in structuring possible future financings and acquisitions, and in meeting other corporate needs that may arise.

The board may authorize, without shareholder approval, the issuance of preferred stock with voting and conversion rights that could adversely affect the voting power and other rights of holders of common stock.

### **Potential Anti-takeover Effects of Minnesota Law and the Company's Charter Documents**

Certain provisions of Charter Documents may make it less likely that someone would acquire voting control of the Company without the board's consent. These provisions may delay, deter or prevent tender offers or takeover attempts that shareholders may believe are in their best interests, including tender offers or attempts that might allow shareholders to receive premiums over the market price of their common stock. Among other things, the Company's Charter Documents:

- allow the board of directors to, at any time, and without shareholder approval, issue one or more new series of preferred stock;
- provide that any action required or permitted to be taken by the shareholders of the company may be effected only at a meeting of shareholders and prohibits shareholder action by less than unanimous written consent in lieu of a meeting; and
- specify procedures for director nominations by shareholders and submission of other proposals for consideration at stockholder meetings.

Several provisions of Minnesota law may deter potential changes in control of us that some shareholders may view as beneficial or that may provide a premium on the Company's stock price. Under Section 302A.673 of the MBCA, a shareholder that beneficially owns 10% or more of the voting power of the outstanding shares (an interested shareholder) generally cannot consummate a business combination with the Company, or any subsidiary of the Company, within four years following the time the interested shareholder crosses the 10% stock ownership threshold, unless the business combination is approved by a committee of disinterested members of the board before the time the interested shareholder crosses the 10% stock ownership threshold.

Section 302A.675 of the MBCA generally prohibits an offeror from acquiring the Company's shares within two years following the offeror's last purchase of the Company's shares pursuant to a takeover offer with respect to that class, unless the Company's shareholders may sell their shares to the offeror upon substantially equivalent terms as those provided in the earlier takeover offer. This provision does not apply if the share acquisition is approved by a committee of disinterested members of the board before the purchase of any shares by the offeror pursuant to the earlier takeover offer.

### **Transfer Agent and Registrar**

The transfer agent and registrar for the Company's common stock is Broadridge Corporate Issuer Solutions.

### **New York Stock Exchange Listing**

The Company's common stock is quoted on The New York Stock Exchange under the symbol "PRLB."

SUBSIDIARIES OF THE REGISTRANT

All of the Company's subsidiaries listed below are wholly owned.

<u>Name</u>	<u>Jurisdiction of Incorporation or Organization</u>
PL-US International LLC	United States
Hubs Manufacturing Inc.	United States
3D Hubs Manufacturing LLC	United States
Proto Labs, Ltd.	United Kingdom
PL International Holdings UK Ltd	United Kingdom
PL Euro Services Limited	United Kingdom
Proto Labs GmbH	Germany
Proto Labs Tooling GmbH	Germany
3D Hubs B.V.	Netherlands
Proto Labs, G.K.	Japan

**Consent of Independent Registered Public Accounting Firm**

We consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-267156, 333-179651, 333-194272, and 333-202486) pertaining to the 2022 Long-Term Incentive Plan, 2012 Long-Term Incentive Plan, Employee Stock Purchase Plan, 2000 Stock Option Plan, and Stock Subscription Warrant of Proto Labs, Inc. and the Registration Statement on Form S-3 (No. 333-253112) of Proto Labs, Inc. of our reports dated February 21, 2023, with respect to the consolidated financial statements of Proto Labs, Inc., and the effectiveness of internal control over financial reporting of Proto Labs, Inc., included in this Annual Report on Form 10-K for the year ended December 31, 2022.

/s/ Ernst & Young LLP

Minneapolis, Minnesota  
February 21, 2023

**PROTO LABS, INC.**  
**POWER OF ATTORNEY OF DIRECTOR AND/OR OFFICER**

Each of the undersigned directors and/or officers of Proto Labs, Inc., a Minnesota corporation (the "Company"), does hereby make, constitute and appoint Robert Bodor and Daniel Schumacher, and each of them, either of whom may act without the joinder of the other, the undersigned's true and lawful attorney-in-fact and agent, with full power of substitution, for the undersigned and in the undersigned's name, place and stead, to sign on his or her behalf, individually and in the capacities stated below, the Annual Report on Form 10-K for the year ended December 31, 2022 under the Securities Exchange Act of 1934, as amended, with any amendment or amendments thereto, with all exhibits thereto and other supporting documents, with the U.S. Securities and Exchange Commission, granting unto said attorneys-in-fact, and each of them, full power and authority to do and perform any and all acts necessary or incidental to the performance and execution of the powers herein expressly granted.

IN WITNESS WHEREOF, each of the undersigned directors and/or officers of Proto Labs, Inc. has hereunto set his or her hand this 14th day of February, 2023.

<u>/s/ Archie C. Black</u> Archie C. Black	Chairman
<u>/s/ Robert Bodor</u> Robert Bodor	President, Chief Executive Officer and Director
<u>/s/ Daniel Schumacher</u> Daniel Schumacher	Chief Financial Officer
<u>/s/ Sven Wehrwein</u> Sven Wehrwein	Director
<u>/s/ Rainer Gawlick</u> Rainer Gawlick	Director
<u>/s/ Stacy Greiner</u> Stacy Greiner	Director
<u>/s/ Donald G. Krantz</u> Donald G. Krantz	Director
<u>/s/ Sujeet Chand</u> Sujeet Chand	Director
<u>/s/ Moonhie Chin</u> Moonhie Chin	Director

**CERTIFICATION PURSUANT TO RULE 13a-14(a) OR 15d-14(a) OF  
THE SECURITIES EXCHANGE ACT OF 1934,  
AS ADOPTED PURSUANT TO SECTION 302 OF  
THE SARBANES-OXLEY ACT OF 2002**

I, Robert Bodor, certify that:

1. I have reviewed this Annual Report on Form 10-K of Proto Labs, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 21, 2023

By: /s/ Robert Bodor  
Robert Bodor  
President and Chief Executive Officer  
(Principal Executive Officer)

**CERTIFICATION PURSUANT TO RULE 13a-14(a) OR 15d-14(a) OF  
THE SECURITIES EXCHANGE ACT OF 1934,  
AS ADOPTED PURSUANT TO SECTION 302 OF  
THE SARBANES-OXLEY ACT OF 2002**

I, Daniel Schumacher, certify that:

1. I have reviewed this Annual Report on Form 10-K of Proto Labs, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 21, 2023

By: /s/ Daniel Schumacher  
Daniel Schumacher  
Chief Financial Officer  
(Principal Financial Officer)

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER  
PURSUANT TO  
18 U.S.C. SECTION 1350,  
AS ADOPTED PURSUANT TO  
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

I, Robert Bodor, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of Proto Labs, Inc. on Form 10-K for the fiscal year ended December 31, 2022 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents in all material respects the financial condition and results of operations of Proto Labs, Inc.

Date: February 21, 2023

By: /s/ Robert Bodor  
Name: Robert Bodor  
Title: President and Chief Executive Officer

I, Daniel Schumacher, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of Proto Labs, Inc. on Form 10-K for the fiscal year ended December 31, 2022 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents in all material respects the financial condition and results of operations of Proto Labs, Inc.

Date: February 21, 2023

By: /s/ Daniel Schumacher  
Name: Daniel Schumacher  
Title: Chief Financial Officer