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, 2024

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 001-39453

Markforged Holding Corporation
(Exact name of Registrant as specified in its Charter)

Delaware	**92-3037714**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
60 Tower Road	
Waltham, MA	**02451**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (866) 496-1805

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 $0.0001 per share	**MKFG**	**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 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 ☐

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 Exchange Act). YES ☐ NO ☒

Based on the closing price as reported on the New York Stock Exchange, the aggregate market value of the Registrant's Common Stock held by non-affiliates on June 30, 2024 (the last business day of the Registrant's most recently completed second fiscal quarter) was approximately $54.1 million. Shares of Common Stock held by each executive officer and director and by each shareholder affiliated with a director or an executive officer have been excluded from this calculation because such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

The number of shares of Registrant's Common Stock outstanding as of March 27, 2025 was 20,746,967.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant’s proxy statement for the 2025 annual meeting of stockholders to be filed pursuant to Regulation 14A within 120 days after the registrant’s fiscal year ended December 31, 2024, are incorporated by reference in Part III of this Annual Report on Form 10-K, except with respect to information specifically incorporated by reference in this Annual Report on Form 10-K, the proxy statement is not deemed to be filed as part of this Annual Report on Form 10-K.

Risk Factors Summary

The risk factors detailed in Item 1A entitled "Risk Factors" in this Annual Report on Form 10-K are the risks that we believe are material to our investors and a reader should carefully consider them. Those risks are not all of the risks we face and other factors not presently known to us or that we currently believe are immaterial may also affect our business if they occur. The following is a summary of the risk factors detailed in Item 1A:

- We may not complete the pending merger with Nano Dimension Ltd. ("Nano") within the anticipated timeframe, or at all, which could have a material adverse impact on our business, financial condition or results of operations, as well as negatively impact the per share price of our Common Stock.

- We have faced, and may continue to face, risks and uncertainties related to litigation in connection with our pending merger with Nano. Such litigation could result in the Nano Merger (as defined below) being delayed and/or enjoined by a court of competent jurisdiction, which could negatively impact our ability to consummate the Nano Merger in a timely manner or at all.

- In the recent past, we have been subject to business and intellectual property litigation and are subject to ongoing settlement obligations resulting from such litigation. For example, on September 20, 2024, we entered into a Settlement and Patent License Agreement ("Settlement Agreement") with Continuous Composites Inc. ("Continuous Composites") to settle outstanding litigation claims and counterclaims. We paid the first settlement payment of $18 million under the Settlement Agreement on October 10, 2024, and are required to make three additional installment payments thereafter of $1 million, $2 million and $4 million in the fourth quarters of fiscal years 2025, 2026 and 2027, respectively, which payments represent substantial ongoing payment obligations that could have an adverse impact on our business, financial condition or results of operations. Further, these settlement payments are secured by a security interest in, among other assets, our patent intellectual property rights; our inability to make any future settlement payments may result in the forfeiture of our patent intellectual property rights to Continuous Composites.

- Our history of operating losses, negative cash flows from operations, substantial ongoing payment obligations, and restrictions on our ability to raise additional capital from equity or debt sources during the pendency of the Nano Merger have raised substantial doubt as to our ability to continue as a going concern which may adversely impact the per share price of our Common Stock, our reputation and relationship with investors, employees and third parties with whom we do business, our ability to meet contractual obligations, and our ability to achieve our business objectives.

- We have a history of net losses and may not be able to achieve profitability for any period in the future or sustain cash flow from operating activities. We have a relatively limited operating history and have experienced rapid growth since our inception, which makes evaluating our current business and future prospects difficult and may increase the risk of your investment. Our operating results have and may continue to fluctuate significantly from period-to-period.

- The additive manufacturing industry in which we operate is characterized by rapid technological change, which requires us to continue to develop new products and innovations to meet constantly evolving customer demands and which could adversely affect market adoption of our products.

- Declines in the global economy, geopolitical and social uncertainties, global health crises, import and export tariffs and difficulties in the markets that we serve may adversely impact our business.

- Adverse developments affecting the financial services industry or other third parties, such as a liquidity crisis, increased levels of defaults or non-performance by financial institutions or transactional counterparties or the perception that any of these events could occur, could adversely affect our current and projected business operations and our financial condition and results of operations.

- We face significant competition in our industry. If we are unable to create new products or meet the demands of our customers, our business could be materially adversely affected.

- We depend on our network of value-added resellers and our business could be materially adversely affected if they do not meet our expectations.

- We depend heavily on third-party suppliers. If they or their facilities become unavailable or inadequate, our business could be adversely affected. We may experience significant delays in the design, production and launch of our additive manufacturing solutions and enhancements to existing products, and we may be unable to successfully commercialize products on our planned timelines.

•We rely on a limited number of third-party logistics providers for distribution of our products, and their failure to effectively distribute our products, including because of delays and disruptions caused by current conditions in global shipping capacity, would adversely affect our sales.

•If demand for our products does not grow as expected, or if market adoption of additive manufacturing does not continue to develop, or develops more slowly than expected, our revenues may stagnate or decline, and our business may be adversely affected.

•Defects in new products or in enhancements to our existing products that give rise to product returns or warranty or other claims could result in material expenses, diversion of management time and attention, and damage to our reputation.

•We may be unable to consistently manufacture our products to the necessary specifications or in quantities necessary to meet demand at an acceptable cost or at an acceptable performance level. As manufacturing becomes a larger part of our operations, we will become exposed to accompanying risks and liabilities. We depend on a limited number of third-party contract manufacturers for a substantial portion of our manufacturing needs and we depend on a number of suppliers for other parts and components. We have increasingly experienced, and expect to continue to experience, price increases, supply shortages and delays and any such delay, disruption or quality control problems in their operations which could cause harm to our operations, including loss of market share, reduced margins and damage to our brand.

•We have experienced, and expect to continue to experience, rapid growth and organizational change since our inception. If we fail to manage this change effectively, we may be unable to execute our business plan, maintain high levels of service and customer satisfaction or attract new employees and customers.

•A real or perceived defect, security vulnerability, error or performance failure in our software or technical problems or disruptions caused by our third-party service providers could cause us to lose revenue, damage our reputation and expose us to liability.

•Our existing and planned global operations subject us to a variety of risks and uncertainties that could adversely affect our business and operating results. Our business is subject to risks associated with selling machines and other products in non-United States locations. Global economic, political and social conditions and uncertainties in the market that we serve may adversely impact our business.

•A significant portion of our business depends on sales to the public sector, and our failure to receive and maintain government contracts or changes in the contracting or fiscal policies of the public sector could have a material adverse effect on our business.

•In the recent past, we have been subject to business and intellectual property litigation. We could be subject to personal injury, property damage, product liability, warranty and other claims involving allegedly defective products that we supply. We could face liability if our additive manufacturing solutions are used by our customers to print dangerous objects.

•If we are unable to adequately protect our proprietary technology or obtain and maintain patent protection for our technology and products or if the scope of the patent protection obtained is not sufficiently broad, our competitors could develop and commercialize technology and products similar or identical to ours, and our ability to successfully commercialize our technology and products may be impaired.

•In the recent past, we have failed to meet the New York Stock Exchange's ("NYSE") continued listing requirements with respect to the trading price of our Common Stock; if we are unable to maintain compliance with the continued listing requirements of the NYSE in the future, our Common Stock could be delisted from the NYSE. Further, our Public Warrants were delisted from the NYSE on January 6, 2025.

•We have identified material weaknesses in our internal control over financial reporting and may identify additional material weaknesses in the future or fail to maintain effective internal control over financial reporting, which may result in material misstatements of our consolidated financial statements or cause us to fail to meet our periodic reporting obligations.

EXPLANATORY NOTE

On July 14, 2021, we consummated the merger (the "Merger") contemplated by the Agreement and Plan of Merger, dated as of February 23, 2021 (the "Merger Agreement"), by and among one, a Cayman Islands exempted company limited by shares ("one"), Caspian Merger Sub Inc., a Delaware corporation and a wholly owned subsidiary of one ("Merger Sub"), and MarkForged, Inc., a Delaware corporation ("Legacy Markforged"). As a result of the Merger, Legacy Markforged merged with and into Merger Sub with Legacy Markforged surviving as our wholly-owned subsidiary and, following one's filing of a notice of deregistration and necessary accompanying documents with the Cayman Islands Registrar of Companies, and a certificate of incorporation and a certificate of corporate domestication with the Secretary of State of the State of Delaware, under which one was domesticated, one changed its name to "Markforged Holding Corporation."

On September 19, 2024, the Company effected a 10-for-1 reverse stock split of the Common Stock. All shares of Common Stock, stock-based instruments and per-share data included in these audited consolidated financial statements have been retroactively adjusted as though the stock split had been effected prior to all periods presented.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains statements that are forward-looking and as such are not historical facts. This includes, without limitation, statements regarding the financial position, business strategy and the plans and objectives of management for our future operations of Markforged Holding Corporation ("Markforged," the "Company," "we," "us"). These statements constitute projections, forecasts and forward-looking statements, and are not guarantees of performance. Such statements can be identified by the fact that they do not relate strictly to historical or current facts. When used in this Annual Report on Form 10-K, words such as "anticipate", "believe", "continue", "could", "estimate", "expect", "intend", "may", "might", "plan", "possible", "potential", "predict", "project", "should", "strive", "would" and similar expressions may identify forward-looking statements, but the absence of these words does not mean that a statement is not forward-looking.

Forward-looking statements in this Annual Report on Form 10-K include, for example, statements about:

- the completion of the Nano Merger, including receipt of the required approval from the Committee on Foreign Investment in the United States ("CFIUS");
- our beliefs regarding the merits of the Complaint and Amended Complaint (each as defined below) filed by Desktop Metal, Inc. ("Desktop Metal") relating to the Nano Merger;
- our ongoing payment and related obligations under the Settlement Agreement;
- our ability to continue as a going concern;
- the benefits of the Merger, and other acquisitions and our ability to realize such benefits;
- our financial performance;
- the effect of uncertainties related to economic downturns, import and export tariffs and global supply chain disruptions, or any future pandemics;
- the expected growth of the additive manufacturing industry;
- our anticipated growth and our ability to achieve and maintain profitability in the future;
- the impact of the regulatory environment and complexities with compliance related to such environment on us;
- the effect of and our ability to respond to general economic, political and business conditions, including recent increases in interest rates, rising inflation, foreign exchange fluctuations and risk of recession;
- our ability to access sources of capital, including debt financing and other sources of capital to finance operations and growth;
- the success of our marketing efforts and our ability to expand our customer base;
- our ability to develop and deliver new products, features and functionality that are competitive and meet market needs;
- our ability to maintain an effective system of internal control over financial reporting;
- our ability to remediate our material weaknesses in our internal control of financial reporting;

- our ability to grow and manage growth profitably and retain key employees;
- the expected impact of any cost reduction initiative we have undertaken and any estimates of our operating expenses and yearly run rate;
- the impact of the reverse stock split on the trading price of our Common Stock, the liquidity of our Common Stock, our ability to attract new investors and raise capital, our ability to maintain compliance with the NYSE's minimum bid price listing requirement with respect to our Common Stock, and the potential delisting of our Common Stock from the NYSE as a result of any future non-compliance with the NYSE's minimum bid price listing requirement; and
- the outcome of legal or governmental proceedings that have been and may continue to be instituted against us, and the impacts of the outcomes of those legal or governmental proceedings on our business operations, financial condition and results of operations.

These forward-looking statements are based on information available as of the date of this Annual Report on Form 10-K and current expectations, forecasts and assumptions, and involve a number of judgments, risks and uncertainties. Accordingly, forward-looking statements should not be relied upon as representing our views as of any subsequent date, and we do not undertake any obligation to update forward-looking statements to reflect events or circumstances after the date they were made, whether as a result of new information, future events or otherwise, except as may be required under applicable securities laws.

As a result of a number of known and unknown risks and uncertainties, our actual results or performance may be materially different from those expressed or implied by these forward-looking statements. You should not place undue reliance on these forward-looking statements.

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PART I

Item 1. Business

Unless the context otherwise requires, all references in this section to the "company", "we", "us", or "our" refer to the business of MarkForged, Inc. and its subsidiaries prior to the consummation of the Merger and to Markforged Holding Corporation and its subsidiaries after giving effect to the Merger.

Company Overview

Our platform, The Digital Forge, is an easy-to-use, reliable and intelligent additive manufacturing platform powering engineers, designers and manufacturing professionals globally. The Digital Forge combines precise and reliable 3D printers, proprietary metal and composite materials and cloud-based software to empower manufacturers to bring industrial production to the point of need on the factory floor. Markforged is based in greater Boston, Massachusetts, where we have our own in-house manufacturing facility and our headquarters, where we design industrial 3D printers, software and metal and composite proprietary materials. We also have a design and manufacturing facility located in Hoganas, Sweden, and maintain several sales and sales support offices globally.

Our software-enabled platform delivers clear value to thousands of customers around the world, including both direct customers and customers of our value added resellers that have purchased one or more of our products. Our customers have printed tens of millions of parts, primarily for high-value, industrial use cases such as industrial tooling, machinery manufacturing, regulated part production, aftermarket spares and replacement parts as well as low- and mid-volume end use part production and high-volume production parts. Blue chip customers in industries such as food and beverage, aerospace, military and defense, industrial automation, space exploration, healthcare and automotive rely on our platform for mission-critical, industrial parts on-demand and at the point-of-need.

Our portfolio of 3D printers include industrial composite printers that provide powerful, predictable functionality through their software, sensors, materials and print modes and metal printers that can fabricate strong, complex metal parts in a variety of metals both in low volume and in higher volumes utilizing our metal binder jetting solution. Across all our models, our powerful yet easy-to-use platform, and our industrial-grade materials, enable engineers to make functional parts for manufacturing environments and other demanding applications.

Our proprietary software provides a single platform to interact with many of our hardware devices, driving consistent reliability for our customers. From simple file storage and versioning to accessible live telemetry, our products are designed to address the unseen minutiae that can inhibit manufacturers' productivity. In a manufacturing ecosystem inundated with non-intuitive user experiences, the simplicity and power of our software drives adoption of our platform to empower manufacturing at the point of need.

Our patented Continuous Fiber Reinforcement ("CFR") process uses continuous strands of composite fibers to make parts as strong as and capable of replacing aluminum. Our Metal X system is capable of printing 17-4 PH Stainless Steel, Copper, H13 Tool Steel, Inconel 625, and D2 Tool Steel to solve those demanding applications that require metal. The Metal Kit, in addition to the FX10, is capable of printing 17-4 Stainless Steel. These products connect to our secure cloud infrastructure and are controlled via web browser, providing a single, simple digital workflow for printing both carbon fiber and metal for organizations that scale from one user to thousands. We have the ability to leverage data from our existing global fleet of printers connected to cloud architecture to enhance our research and development capabilities for the future benefit of our customers. The data generated by our fleet of thousands of connected printers flows into our AI-powered, closed-loop additive manufacturing solution, which is currently offered as a software subscription.

Industry Background

Traditional Manufacturing Faces Many Limitations.

Engineers and product developers are constrained by the physical parameters of conventional manufacturing processes. These parameters define the design possibilities, adding cost and lead time to manufacturing programs and placing firm boundaries on the performance of parts and products. Additive manufacturing lifts many of these limitations, opening up new design capabilities that allow engineers to harness and sustain measurable advantages in durability, weight and customizability.

More broadly, modern manufacturing equipment and labor require complex supply chains made up of multiple hubs and nodes to function. Failure in any single supply node has the potential to compromise the entire supply chain. Digital manufacturing decouples part production from these complex systems, shortening supply chains by bringing manufacturing production onshore right at the point of need.

Additive Manufacturing has the Potential to Overcome Many of these Limitations.

Additive manufacturing has the potential to overcome many of the limitations of conventional manufacturing. The new design capabilities provide significant possibilities for superior products that drive higher performance and more closely match customer preferences. The easy-to-use interface that operates our printers can be easily learned by factory floor personnel. With additive manufacturing technology, manufacturers may now combat supply chain constraints, allowing them to respond more quickly to sharp changes in demand signals. Machines the size of microwave ovens that require no skilled labor can now help manufacturers circumvent expensive and time-consuming supply chains by printing parts when and where they are needed.

Most 3D Printing Solutions Today are Focused on Design and Prototyping Applications.

Despite the apparent benefits of additive manufacturing relative to conventional manufacturing, it has taken the industry nearly four decades to arrive at a solution that is widely adopted for applications beyond one-offs and prototypes. Part of the reason for such slow adoption is that before Markforged, there were only two limited categories of 3D printers available. Additionally, both categories were engineered as point solutions for a single factory, making distributed digital manufacturing across a network of printers cumbersome or infeasible. For these reasons, neither of these choices was appropriate for the manufacturing floor or distributed manufacturing at scale.

Markforged is Delivering the Promise of Additive Manufacturing Today.

We invented The Digital Forge, a platform designed to overcome both the constraints of conventional manufacturing as well as the limitations of legacy 3D printing solutions. Through The Digital Forge, manufacturers can produce metal and composite parts that are functionally applicable for the most demanding manufacturing applications. The parts printed on The Digital Forge are based in either a variety of metals, or a variety of composites and continuous fibers, each providing high-strength materials for manufacturing applications. Moreover, the software that powers The Digital Forge was designed to be cloud-first. In contrast to legacy additive solutions, Markforged’s printers can be accessed and controlled from anywhere in the world and entire libraries of part inventory can be digitized and printed only when needed. This smart, simple and robust platform is designed to give engineers, designers and manufacturing professionals the power to solve their most challenging manufacturing problems.

Our Growth Strategy

Our future growth is driven by four key strategies:

- ***Continue to Fuel Integrated Platform with Software Solutions.*** Our integrated platform is designed to scale in both capability and size over time. As we invest additional resources into the feature set of our platform, we expect to be able to solve more customer problems and applications. As we solve more problems, customers will print more parts. As we print more parts, more data will be generated, making our premium software solutions, including Simulation, Inspection and enterprise-grade fleet management, smarter. As our premium software solutions get smarter, we will be able to print better, more accurate parts. As we print better parts, more customers will adopt our premium software solutions, which will continue to drive this growth and improvement cycle more rapidly.
- ***Expand Customer Use Cases and Applications.*** As we develop printers that are faster, larger and more precise, such as the FX20 and FX10, and add new industrial materials to our capabilities, we continually expand the possible use cases for our customers. We regularly release new printers, software functionality and materials that customers may apply to a variety of new problems and use cases.
- ***Drive Deeper, More Efficient Go-To-Market Coverage.*** As we grow our global distribution footprint and drive optimizations in our go-to-market model, we will grow our sales.
- ***Expand Position as a Trusted Brand.*** Due to the innovative technology that we have invented, which is addressing significant global problems in manufacturing, we have the opportunity to invest resources to build a meaningful industrial technology brand. As our brand grows, we expect to generate more organic interest in our products, lowering our cost-to-acquire customers, which will facilitate our growth and improvement cycle and help expand our business.

Our Competitive Strengths

- ***Markforged delivers accessible, industrial-strength parts.*** We offer a range of proprietary composite and metal printers and materials that address numerous industrial applications. We invented and patented the CFR composite additive manufacturing process. The capabilities that CFR enables are unmatched by our competitors, and a significant portion of our customers use our CFR materials today to replace traditionally manufactured steel and aluminum parts. Because sometimes only metal will suit the application, we offer two different types of metal 3D printers: Fused

Filament Fabrication (“FFF") and metal binder jetting. The Metal X and the Metal Kit addition to the FX10, our FFF solutions, are well suited to custom parts which can be too costly and can take too long to obtain with conventional subtractive manufacturing processes. And, once an application is ready for production, our PX100 metal binder jetting solution provides higher-throughput end-use metal parts.

•***Markforged offers customers a clear and tangible ROI.*** We provide simple, cost-effective and reliable solutions to manufacture mission critical parts. With The Digital Forge platform, our customers can realize significant cost and time savings, relative to conventional manufacturing, which in turn drives purchases of incremental printers and further development of new applications.

•***Markforged’s integrated, modern software platform drives faster innovation.*** We built our entire platform on cloud-based architecture, bringing benefits traditionally confined to Software as a Service (“SaaS”) space to hardware. This architecture connects us to our customer’s printers in the field, creating a fleet of connected printers generating data to power our AI-learning algorithms that in turn guides the future development of our 3D printers with each part printed.

The Digital Forge

The Digital Forge is the intuitive additive manufacturing platform for modern manufacturers, bringing the power and speed of agile software development to industrial manufacturing. Composed of hardware, software and materials working as a unified platform, it is purpose-built to integrate into our customers’ existing manufacturing ecosystems. The Digital Forge adopters can achieve immediate benefits through savings of time and money on factory line support and end-use parts. Through increased adoption, the platform can drive competitive advantages by making our customers’ entire operations more efficient and responsive.

3D Printers

We offer a reliable line of 3D printers all designed around one goal - empower manufacturers to print industrial-strength parts at the point of need. Our machines combine high build quality, intuitive user experience and broad platform connectivity to produce reliable, repeatable results.

We offer three principal categories of 3D printers and systems:

•***Desktop***: Our Desktop 3D Printers are precision-built professional machines designed to reliably print quality parts. These printers deliver precise results with a smaller form factor, making them ideal when space is at a premium.

•***Industrial***: Our Industrial 3D Printers provide best-in-class predictability and functionality through sensors, software, materials and print modes.

•***Metal***: Our Metal 3D Printers fabricate complex metal parts in a variety of advanced metals.

Materials

We offer the only industrial 3D printing family for fabricating composite, continuous fiber and metal parts on the same platform. All the materials available for printing on The Digital Forge offer a high degree of flexibility for part design and manufacturing. Our 3D printers are simple to use and do not require intensive build outs or trained technicians. We currently offer the following materials:

•Composite: Onyx™, Onyx FR™, Onyx ESD™, ULTEM™ 9085 Filament, Smooth TPU 95a, Precise PLA, Nylon and Vega™.

•Continuous Fiber: Carbon Fiber, Carbon Fiber FR, Aramid Fiber (Kevlar®), HSHT Fiberglass, and Fiberglass.

•Metal: 17-4 PH Stainless Steel, 3-16L Stainless Steel, Copper, Inconel 625, H13 Tool Steel, and D2 Tool Steel.

Our customers can print the right material for the right applications. If a customer requires strength and low weight, composites can replace metal parts and accelerate production times. If customers need something to withstand high temperatures and provide wear resistance, metals can be utilized. In addition, customers can combine parts made of different materials for even higher-performing parts using the CFR process.

CFR augments traditional FFF technology, enabling our printers to reinforce FFF parts with continuous fibers. A CFR-capable machine uses two extrusion systems for two unique materials: one for conventional FFF polymer filament, and a second for long strand continuous fibers. Continuous fibers are laid down in-layer, replacing FFF infill. As a result, a CFR-capable printer can print both traditional FFF-only parts or CFR parts (FFF parts reinforced with continuous fibers).

CFR represents a step-change improvement in part performance for only an incremental increase in effort. CFR parts are significantly stronger (up to 25 times stronger than ABS plastics) and can replace machined aluminum parts. The process is inherently flexible: simple enough for anyone to use and powerful enough to enable deep customization of part mechanical properties. This means that an engineer can reinforce a part with continuous fibers with two clicks of a button and customize reinforcement on a layer-by-layer basis on the same platform. With five available fibers and multiple reinforcement techniques that can be granularly configured, parts can be highly customized for applications. We believe the capabilities that CFR enables are unmatched by current alternatives.

Software

Our software pairs advanced 3D printing software with the first connected additive manufacturing platform. Our software is an integrated platform designed to help customers get from design to part quickly. It empowers users to take control of their manufacturing workflow in four ways:

- ***Advanced part slicing and printing.*** Our software is an integrated, connected platform designed to take customers from CAD to functional part quickly. The browser-based workflow is secure, fast and intuitive. Users can design parts for printing with a single click, or drill deeply into part settings to specially optimize part properties. Our software enables customers to create builds, print parts, and monitor prints in a seamless workflow.
- ***Integrated cloud part repository.*** A secure part library enables customers to dynamically manage engineering projects of any size. Our software’s part files are securely stored and can be versioned, edited and printed anywhere. Easy-to-use filters and folders enable customers to quickly store and find the parts they need when they need it. With the launch of Digital Source, users can leverage our part library to license and 3D print parts.
- ***Enterprise-grade fleet management.*** Our software provides a single place to manage our customers’ printer fleets in real time, whether in one location or worldwide. Users can benefit from automatic updates while getting analytics, usage data and live telemetry.
- ***Analysis.*** Incorporating 3D printing into tooling and end-use applications requires confidence in the strength of the parts. By replacing slow and costly design/print/break testing cycles with virtual testing, Markforged Simulation software can enable manufacturers to expand their use of additive manufacturing into t production applications. Our Performance Advisor functionality can enable users to explore the best ways to print a part that balances strength, material use and print time.

Customers

We have thousands of customers (including both direct customers and customers of our value added resellers that have purchased one or more of our products) around the world, and have printed millions of parts. Our customers range from small and medium-sized organizations to Fortune 100 manufacturers in leading edge industries such as aerospace, military and defense, food and beverage, industrial automation, space exploration, healthcare and automotive who utilize our platform for mission critical, end-use parts on-demand and at the point-of-need.

Research and Development

Investment in research and development is at the core of our business strategy. Our research and development team is responsible for designing, developing and enhancing our products, as well as performing product testing and quality assurance activities. Members of our research and development team specialize in mechanical engineering, electrical engineering, material science, product realization and software engineering.

Research and development expenses totaled $32.4 million and $40.7 million in the years ended December 31, 2024 and 2023, respectively. We expect our research and development expense to remain consistent for the foreseeable future as we continue to enhance existing products, develop new products for current markets and introduce new products in new markets.

The majority of our research and development operations are conducted in our facility in Waltham, Massachusetts. We also maintain a design facility for our binder jetting solution located in Hoganas, Sweden.

Sales and Marketing

We primarily sell our products and services through a global channel of third-party value-added reseller partners (“VARs”). We have approximately 100 VARs spanning the globe with over a thousand full-time employees who market, sell and support our platform. Our VAR channel allows us to have global scale, engage deeply with our customers and provide significant operating leverage to our business. We have and will continue to optimize our VAR network focused on global manufacturing.

Our global marketing team drives new customer acquisition, retention and expansion of existing customers and the demonstration and capabilities set of our products.

Manufacturing and Suppliers

Our goal is to create an excellent customer experience by shipping quality products on time and providing meaningful support after delivery, all while working safely. We work toward this goal by being selective with our resources, dedicating our focus to areas where we see a strategic advantage, and working with high quality outsourced partners to manage the rest. Our printer manufacturing operations include both our internal manufacturing facility in Billerica, Massachusetts as well as third-party contract manufacturers who source materials, manufacture components and assemble products in accordance with our specifications and quality standards. We currently source and manufacture our consumable materials, which provides flexibility, increased responsiveness and a distinct competitive advantage.

Our Competition

The industry in which we operate is fragmented and competitive. We compete for customers with a wide variety of conventional and additive manufacturing solution providers. We believe that the market is in its early phases of adoption of additive manufacturing technology, and that the potential for growth will be significant as our target customers seek more flexible, customized, software-enabled manufacturing processes to shorten their supply chains and compete globally.

We believe we compare favorably to other industry participants on the basis of the following competitive factors applicable to our products:

- cloud-based, AI-learning software platform;
- proprietary CFR process;
- highly accessible metal printing;
- robust intellectual property;
- proven customer adoption in mission critical applications;
- ease of deployment, implementation and use;
- platform scalability; and
- security and reliability.

Human Capital

We consider our employees to be critical to our success. As of December 31, 2024, we had 270 full-time employees based primarily in the greater Boston, Massachusetts area. A majority of our employees are engaged in engineering, operations and related functions. To date, we have not experienced any work stoppages and consider our relationship with our employees to be in good standing. Our employees based in Sweden are subject to one of two current collective bargaining agreements. These agreements apply to 28 of our full-time employees as of December 31, 2024.

Our success depends upon our ability to attract and retain highly qualified employees. We are committed to creating and maintaining an inclusive culture which values equality, opportunity and respect. We expect all of our employees to observe the highest levels of business ethics, integrity, mutual respect, tolerance and inclusivity. Our employee handbook and Code of Conduct and Ethics set forth policies reflecting these values and also provide direction for registering complaints in the event of any violation of our policies. An “open door” policy is maintained at all levels of the organization and any form of retaliation against an employee is strictly prohibited.

The success of our business is fundamentally connected to the physical and mental well-being of our people. Accordingly, we are committed to the health, safety and wellness of our employees and contractors. We provide our employees with a wide range of benefits, including benefits directed to their health, safety and long-term financial security.

Intellectual Property

Our ability to drive innovation in the additive manufacturing market depends in part upon our ability to protect our core technology and intellectual property. We attempt to protect our intellectual property rights, both in the United States and abroad, through a combination of patent, trademark, copyright and trade secret laws, as well as through contractual provisions and restrictions on access to our proprietary technology which includes nondisclosure and invention assignment agreements with our consultants and employees and through non-disclosure agreements with our vendors and business partners. We further control the use of our proprietary technology and intellectual property through provisions in both general and product-specific terms of use. Unpatented research, development, know-how and engineering skills make an important contribution to our business, but we pursue patent protection when we believe it is possible and consistent with our overall strategy for safeguarding intellectual property.

As of December 31, 2024, we own 71 issued United States patents, 94 issued foreign patents and have 61 pending or allowed patent applications. Our patents and patent applications are directed to, among other things, additive manufacturing and related technologies.

We have 6 issued United States trademarks and 36 issued foreign trademarks, including “Markforged” in the European Union, Australia, Canada, China, Israel, Japan, and the Republic of Korea. We have 1 pending United States trademark application and 2 pending foreign applications.

Government Regulations

We are subject to various laws, regulations and permitting requirements of federal, state and local authorities, including related to environmental, health and safety; anti-corruption and export controls. We believe that we are in material compliance with all such laws, regulations and permitting requirements.

Environmental Matters

We are subject to domestic and foreign environmental laws and regulations governing our operations, including, but not limited to, emissions into the air and water and the use, handling, disposal and remediation of hazardous substances. A certain risk of environmental liability is inherent in our production activities. These laws and regulations govern, among other things, the generation, use, storage, registration, handling and disposal of chemicals and waste materials, the presence of specified substances in electrical products, the emission and discharge of hazardous materials into the ground, air or water, the cleanup of contaminated sites, including any contamination that results from spills due to our failure to properly dispose of chemicals and other waste materials and the health and safety of our employees. We are required to obtain environmental permits from governmental authorities for certain operations.

The export of our products internationally from our production facilities subjects us to environmental laws and regulations concerning the import and export of chemicals and hazardous substances such as the United States Toxic Substances Control Act (“TSCA”) and the Registration, Evaluation, Authorization and Restriction of Chemical Substances (“REACH”). These laws and regulations require the evaluation and registration of some chemicals that we ship along with, or that form a part of, our systems and other products.

Export and Trade Matters

We are subject to anti-corruption laws and regulations imposed by governments around the world with jurisdiction over our operations, including the U.S. Foreign Corrupt Practices Act and the U.K. Bribery Act 2010, as well as the laws of the countries where we do business. We are also subject to various trade restrictions, including trade and economic sanctions, export controls and the threat of tariffs, imposed by governments around the world with jurisdiction over our operations. For example, in accordance with trade sanctions administered by the Office of Foreign Assets Control and the U.S. Department of Commerce, we are prohibited from engaging in transactions involving certain persons and certain designated countries or territories. In addition, our products are subject to export regulations that can involve significant compliance time and may add additional overhead cost to our products. In recent years, the United States government has a renewed focus on export matters related to additive manufacturing. Some of our products are already more tightly controlled for export, and other of our products may in the future become more tightly controlled for export. For example, the Export Control Reform Act of 2018 and regulatory guidance thereunder have imposed additional controls and may result in the imposition of further additional controls, on the export of certain “emerging and foundational technologies.” Our current and future products may be subject to these heightened regulations, which could increase our compliance costs.

Corporate Information

Prior to July 14, 2021, we were a blank check company known as one incorporated in the Cayman Islands on June 24, 2020 as a Cayman Islands exempted company for the purpose of effecting a merger, share exchange, asset acquisition, share purchase, reorganization or similar business combination with one or more businesses. Legacy Markforged was formed as a Delaware corporation in 2013.

On July 14, 2021, we completed the Merger. In connection with the completion of the Merger, one was renamed Markforged Holding Corporation. Our website address is www.markforged.com. Our website and the information contained on, or that can be accessed through, the website will not be deemed to be incorporated by reference in, and are not considered part of, this Annual Report on Form 10-K.

We are an “emerging growth company” as defined in the Section 2(a)(19) of the Securities Act. We will remain an emerging growth company until the earlier of: (i) the last day of the fiscal year (a) following the fifth anniversary of the completion of the IPO, (b) in which we have total annual gross revenue of at least $1.235 billion, or (c) in which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds $700.0 million as of the prior June 30th, and (ii) the date on which we have issued more than $1.0 billion in non-convertible debt during the prior three-year period.

Available Information

Our website address is www.markforged.com. Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, including exhibits, proxy and information statements and amendments to those reports filed or furnished pursuant to Sections 13(a), 14, and 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, are available through the “Investor Relations” portion of our website free of charge as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Information on our website is not part of this Annual Report on Form 10-K or any of our other securities filings unless specifically incorporated herein by reference. In addition, our filings with the SEC may be accessed through the SEC’s Interactive Data Electronic Applications system at www.sec.gov. All statements made in any of our securities filings, including all forward-looking statements or information, are made as of the date of the document in which the statement is included, and we do not assume or undertake any obligation to update any of those statements or documents unless we are required to do so by law.

Our code of conduct, corporate governance guidelines and the charters of our Audit Committee, Compensation Committee and Nominating and Corporate Governance Committee are available through the “Investor Relations” portion of our website.

Item 1A. Risk Factors.

Risk Factors

A description of the risks and uncertainties associated with our business and industry is set forth below. You should carefully consider the risks and uncertainties described below, together with all of the other information in this Annual Report on Form 10-K, including our consolidated financial statements and notes thereto and the "Management's discussion and analysis of financial condition and results of operations" section of this Annual Report on Form 10-K before deciding whether to purchase shares of our common stock. If any of the following risks are realized, our business, financial condition, operating results and prospects could be materially and adversely affected. In that event, the price of our common stock could decline, perhaps significantly. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operation.

Risks Related to the Proposed Merger with Nano Dimension Ltd.

We may not complete the Nano Merger within the anticipated timeframe, or at all, which could have a material adverse impact on our business, financial condition or results of operations, as well as negatively impact the per share price of our Common Stock.

On September 25, 2024, we entered into the Nano Merger Agreement. For more information, see Note 1, *Organization, Nature of the Business, and Risks and Uncertainties,* to our Audited Consolidated Financial Statements. Consummation of the Nano Merger is subject to satisfaction or waiver of certain closing conditions, including receipt of required regulatory approval from CFIUS. On October 24, 2024, we and Nano jointly submitted to CFIUS a declaration, and all accompanying materials required under Section 721 of the Defense Production Act of 1950, as amended, (the "CFIUS Declaration"), and the CFIUS Declaration assessment period expired on November 27, 2024. On November 27, 2024, CFIUS requested that the parties submit a full joint voluntary notice (the "CFIUS Notice"), which the parties submitted and which was accepted by CFIUS on January 14, 2025. At the end of the 45-day review period, on February 27, 2025, CFIUS notified the parties that it would extend its review into a 45-day investigation period. At any time prior to the expiration of the 45-day investigation period, CFIUS may request that the parties withdraw and re-file the CFIUS Notice which has the effect of restarting the initial 45-day review period and potential additional 45-day investigation period. CFIUS may reject the CFIUS Notice at any time after it has been accepted for certain reasons, including if we and/or Nano do not timely provide information requested by CFIUS or if the parties fail to reach an agreement on mitigation requirements imposed by CFIUS. As a result of CFIUS's review or investigation of the Nano Merger, CFIUS may: (i) conclude action under applicable regulations by determining that there are no unresolved national security concerns; (ii) send a report to the President of the United States (the "President") recommending that the Nano Merger be suspended or prohibited; or (iii) send a report to the President requesting the President's decision if: (a) CFIUS recommends that the President suspend or prohibit the Nano Merger; (b) the members of CFIUS are unable to reach a decision on whether to recommend that the President suspend or prohibit the Nano Merger; or (c) CFIUS requests that the President make a determination with regard to the Nano Merger. To determine that there are no unresolved national security concerns, CFIUS may impose mitigation measures and request that the parties enter into a National Security Agreement. Should CFIUS send a report to the President, the President will have up to 15 days to decide whether to suspend or prohibit the Nano Merger. The failure to obtain or delay in obtaining the required CFIUS approval has delayed and could further delay completion of the Nano Merger or impose additional costs or limitations on us or may result in the failure to close the Nano Merger. We cannot provide any assurance that the conditions to the consummation of the Nano Merger will be satisfied or waived or that, if the Nano Merger is consummated, it will be on the terms specified in the Nano Merger Agreement or within the anticipated timeframe.

Failure to complete the Nano Merger within the anticipated timeframe, or at all, could adversely affect our business and the market price of our Common Stock in a number of ways, including:

- The price of our Common Stock may decline to the extent that current market price of our Common Stock reflects assumptions that the Nano Merger will be completed and/or completed on a timely basis.
- The failure to complete the Nano Merger may result in negative publicity and negatively affect our relationship with our stockholders, employees, customers, suppliers and employees.
- If the Nano Merger is not completed, the time and significant resources committed by our management team could have been devoted to pursuing other business opportunities and initiatives.
- We have incurred, and will continue to incur, significant expenses for professional services in connection with the Nano Merger for which we will have received little or no benefit if the Nano Merger is not completed.
- Under specified circumstances, upon termination of the Nano Merger Agreement, we may be required to pay Nano a termination fee of $4,600,000, which payment could have material adverse effect on our business, financial condition, and results of operations, and could discourage other potential bidders from making an acquisition proposal.

The occurrence of any of these events individually or in combination could have a material adverse effect on our business, financial condition or results of operations, as well as negatively impact the per share price of our Common Stock.

We have faced, and may continue to face, risks and uncertainties related to litigation in connection with the Nano Merger.

Securities class action lawsuits and derivative lawsuits are often brought against public companies that have entered into merger agreements or as a result of stock price volatility. Even if the lawsuits are without merit, defending against these claims can result in substantial costs and divert management time and resources. An adverse judgment could result in monetary damages.

Moreover, we have, and may in the future become subject to various litigations, in connection with the Nano Merger that have required, and may continue to require, us to devote significant time and resources and incur significant costs. For example, as previously disclosed, on December 31, 2024, Desktop Metal, Inc. filed a complaint captioned *Desktop Metal, Inc. v. Nano Dimension Ltd., et al., C.A. No. 2025-0002-KSJM*, in the Delaware Court of Chancery (the "Court") in which we and Nano were named as defendants (the "Complaint" and such litigation, the "Desktop Metal Action"). The Complaint generally alleged that Nano breached the terms of its merger agreement with Desktop Metal by subsequently entering into the Nano Merger Agreement with us, and that closing the Nano Merger prior to the pending merger between Desktop Metal and Nano (the "Desktop Metal Merger") would jeopardize the parties' ability to close the Desktop Metal Merger. Desktop Metal requested, among other forms of relief, an order from the Court enjoining consummation of the Nano Merger until the Desktop Metal Merger has closed. On January 22, 2025, Desktop Metal filed a notice of voluntary dismissal with the Court to dismiss us as a defendant in the Desktop Metal Action, without prejudice. Subsequently, on January 31, 2025 and February 4, 2025, respectively, the Court granted Desktop Metal leave to file an amended complaint (the "Amended Complaint") and consolidated the action with a prior action related to the Desktop Metal Merger, which Desktop Metal had previously filed against Nano in the Delaware Court of Chancery on December 16, 2024. The consolidated action is captioned *Desktop Metal, Inc. v. Nano Dimension Ltd. et al.,* C.A. No. 2024-1303-KSJM (the "Consolidated Desktop Metal Action"). While we are no longer a defendant in the Consolidated Desktop Metal Action, the lawsuit between Nano and Desktop Metal remains active with Desktop Metal continuing to claim that Nano breached its obligations to Desktop Metal by pursuing the Nano Merger.

Trial took place in the Consolidated Desktop Metal Action on March 11 and 12, 2025. On March 24, 2025, the Court issued a post-trial decision (the "March 24 Decision") holding that Nano breached its obligations under the Desktop Metal Merger agreement to take all actions necessary to obtain regulatory approval from CFIUS and use reasonable best efforts to close the Desktop Metal Merger, and that Nano failed to prove its counterclaims against Desktop Metal. Nano was ordered to enter into a National Security Agreement with CFIUS and to close the Desktop Metal Merger. The Court also issued a letter decision on March 26, 2025 regarding Desktop Metal's claims pertaining to Nano's conduct in purusing the Nano Merger Agreement, which directed the parties to update the Court regarding the relevance of the Nano Merger in light of Court's March 24 Decision. Desktop Metal and Nano submitted a joint letter to the Court, dated March 26, 2025, addressing among other things the relevance of the Nano Merger to the parties' disputes, pursuant to the Court's March 26 letter decision. In the letter, Desktop Metal stated that, in light of the Court's order directing Nano to close the Desktop Metal Merger and Nano's continued written confirmation that it will provide Desktop Metal with five days notice before closing the Nano Merger, it does not at this time seek an injunction concerning the Nano Merger.

While we are no longer a defendant in the Consolidated Desktop Metal Action, the outcome of this action could have a negative impact on the Nano Merger, including the Nano Merger being delayed and/or enjoined by a court of competent jurisdiction, which could prevent the Nano Merger from becoming effective. We may also be subject to future litigation in connection with the Nano Merger, which could also have a negative impact on our ability to consummate the Nano Merger in a timely manner or at all.

Additionally, as previously disclosed, following the announcement of the Nano Merger, purported stockholders filed complaints and sent us demand letters alleging that the definitive proxy statement on Schedule 14A filed with the Securities and Exchange Commission ("SEC") on November 13, 2024 (the "Definitive Proxy Statement") omitted material information that rendered it misleading or incomplete in violation of New York State common law and federal securities laws. We also received a demand from a purported stockholder in connection with the Definitive Proxy Statement seeking to inspect certain corporate books and records under Section 220 of the Delaware General Corporation Law. Additional information can be found in the supplement to our Definitive Proxy Statement filed on Schedule 14A with the SEC on November 27, 2024.

The pendency of the Nano Merger could materially adversely affect our business, financial condition or results of operations, as well as negatively impact the per share price of our Common Stock.

Our efforts to complete the Nano Merger could cause substantial disruptions in, and create uncertainty surrounding, our business, which may materially adversely affect our business, financial condition or results of operations, or the per share price of our Common Stock. Uncertainty as to whether the Nano Merger will be completed may affect our ability to recruit prospective employees or to retain and motivate existing employees. Employee retention may be particularly challenging while the transaction is pending because employees may experience uncertainty about their roles following consummation of the Nano Merger. A substantial amount of our management’s and employees’ attention has been and will continue to be directed toward the completion of the Nano Merger and thus is being diverted from our day-to-day operations. Uncertainty as to our future also could adversely affect our business and our relationship with strategic partners, suppliers, existing or prospective customers or regulators. For example, suppliers, existing or prospective customers and other counterparties may defer decisions concerning us, or seek to change existing business relationships with us, whether pursuant to the terms of their existing agreements with us or otherwise. Changes to or termination of existing business relationships could materially adversely affect our financial condition and results of operations, as well as negatively impact the per share price of our Common Stock. The adverse effects during the pendency of the Nano Merger could be exacerbated by any delays in completion of the Nano Merger, changes to the terms of, or termination of, the Nano Merger Agreement.

We have incurred, and will continue to incur, significant direct and indirect costs as a result of the pending Nano Merger.

We have incurred, and will continue to incur, significant costs and expenses, including legal, financial, accounting and other advisory fees and other transaction costs, in connection with the pending Nano Merger. Any further delay in the consummation of the Nano Merger could result in us incurring additional transaction-related costs and expenses. We will be required to pay a substantial portion of these costs and expenses whether or not the Nano Merger is completed. There are a number of factors beyond our control that could affect the total amount or the timing of these costs and expenses.

While the Nano Merger Agreement remains in effect, we are subject to restrictions on our business activities.

While the Nano Merger Agreement remains in effect, we are subject to restrictions on our business activities, generally requiring us to conduct our business in the ordinary course, consistent with past practice, in all material respects, and subjecting us to a variety of specified limitations absent Nano’s prior consent, subject to a number of exceptions. These limitations include, among other things, restrictions on our ability to merge or consolidate with, or acquire equity interests in, any other business, enter into any new line of business or discontinue any existing line of business, authorize or make certain capital expenditures, hire, terminate or promote certain employees, grant any cash or equity-based incentive awards to current employees, enter into certain contracts, repurchase or issue securities, pay dividends, amend our organizational documents, and incur indebtedness. These restrictions could prevent us from pursuing other strategic business opportunities, taking actions with respect to our business that we may consider advantageous and responding effectively or on a timely basis to competitive pressures and industry developments, and may as a result materially adversely affect our business, financial condition and results of operations.

The Nano Merger Agreement contains provisions that prohibit a third party from proposing an alternative transaction or acquire our company prior to the consummation of the Nano Merger.

The Nano Merger Agreement contains provisions that prohibit our ability to entertain a third-party proposal for an acquisition of our company or an alternative transaction in lieu of the Nano Merger. These provisions include our agreement not to, directly or indirectly, solicit, initiate, facilitate, or knowingly encourage any third-party acquisition proposal of our company, as well as restrictions on our ability to respond to such proposals, even one that may be deemed of greater value to our stockholders than the proposed Nano Merger.

Our executive officers and directors may have interests in the proposed Nano Merger that are different from, or in addition to, those of our stockholders generally.

Our executive officers and directors may have interests in the proposed Nano Merger that are different from the interests of our stockholders generally, including, among others, the acceleration of the vesting of equity awards, receipt by certain executive officers of severance payments and benefits upon a qualifying termination within a set time period following the Nano Merger, and continued indemnification following the Nano Merger. These interests, among others, may influence, or appear to influence, our executive officers and directors and cause them to view the Nano Merger differently from how our stockholders generally may view it.

Additional information regarding our executive officers and directors and their interests in the proposed Nano Merger are included in our definitive Proxy Statement relating to the proposed Nano Merger filed on Schedule 14A with the SEC on November 13, 2024.

If the Nano Merger is consummated, our stockholders will not be able to participate in any further upside to our business.

If the Nano Merger is consummated, each share of Common Stock (other than (i) shares of the Company's preferred stock, par value $0.0001 per share ("Preferred Stock"), (ii) shares of Common Stock held by the Company in the Company's treasury or which are held directly by a Company subsidiary, Nano or Nano Merger Sub immediately prior to the effective time of the Nano

Merger (the “Effective Time”), and (iii) shares of Common Stock held by Company stockholders that are entitled to demand, and have properly demanded appraisal for such shares, in accordance with, and have complied in all respects with, Section 262 of the Delaware General Corporation Law (such shares, "Dissenting Shares" and together with the shares referenced in clauses (i)-(iii), the "Excluded Shares")) held by our stockholders immediately prior to the Effective Time will be cancelled and automatically cease to exist and will be converted into the right to receive $5.00 per share in cash, without interest, subject to applicable withholding taxes. As a result, even if our business following the Nano Merger performs well, our current stockholders will not receive any additional consideration and will therefore not receive any benefit from any such future performance of our business.

Risks Related to Our Business and Industry

We have been in the recent past, subject to business and intellectual property litigation.

The additive manufacturing industry has been, and may continue to be, litigious, particularly with respect to intellectual property claims. We have been in the recent past involved in litigation, and we could be involved in additional litigation in the future.

In particular, in July 2021, Continuous Composites filed a patent-infringement case against us in the United States District Court of Delaware. On April 11, 2024, the jury returned a verdict against us in the amount of $17.3 million. As discussed in Part I, Item 3 of this Annual Report on Form 10-K, we entered into the Settlement Agreement with Continuous Composite in September 2024 to resolve all outstanding claims and counterclaims, and the case has been dismissed. We paid the first settlement payment of $18 million required under the Settlement Agreement on October 10, 2024, and are required to make three additional installment payments thereafter of $1 million, $2 million and $4 million in the fourth quarters of fiscal years 2025, 2026 and 2027, respectively, which payments represent substantial ongoing payment obligations that could have an adverse impact on our business, financial condition or results of operations. Further, these settlement payments are secured by a security interest granted to Continuous Composites in, among other assets, our patent intellectual property rights; our inability to make any future settlement payments may result in the forfeiture of our patent intellectual property rights to Continuous Composites pursuant to the Security Agreement.

In order to protect our intellectual property rights in the Continuous Composites litigation described above, or in any other similar claims in the future, we have spent and may continue to be required to spend significant resources to monitor, protect, and defend these rights, and we may or may not be able to detect infringement by our customers or third parties. Litigation has been and may be necessary in the future to enforce our intellectual property rights and to protect our trade secrets. Such litigation, regardless of merit, can be costly, time consuming, and distracting to management and key technical personnel, and can result in the impairment or loss of portions of our intellectual property. Furthermore, our efforts to enforce our intellectual property rights may be met with defenses, counterclaims, and countersuits attacking the validity and enforceability of our intellectual property rights. Our inability to protect our proprietary technology against unauthorized copying or use, as well as any costly litigation or diversion of our management’s attention and resources, could delay further sales or the implementation of our platform, impair the functionality of our platform, delay introductions of new features, integrations, and capabilities, result in our substituting inferior or more costly technologies into our platform, or injure our reputation. In addition, we may be required to license or pay royalties on additional technology from third parties to develop and market new features, integrations, and capabilities, and we cannot be certain that we could license that technology on commercially reasonable terms or at all, and our inability to license this technology could harm our ability to compete.

As part of any settlement or other compromise to avoid complex, protracted litigation, including under the terms of the Settlement Agreement, we have and may again in the future agree not to pursue future claims against a third party, including related to alleged infringement of our intellectual property rights, which may resolve a potentially costly dispute but may also have future repercussions on our ability to defend and protect our intellectual property rights, which in turn could adversely affect our business. Regardless of the outcome, litigation has resulted in the past, and may result in the future, in significant legal expenses and require significant attention and resources of management. As a result, future litigation that may be brought against us by any third party could result in reputational harm, losses, damages and expenses that may have a significant adverse effect on our financial condition.

Risks Related to Our Operating History

Our history of operating losses, negative cash flows from operations, substantial ongoing payment obligations, and restrictions on our ability to raise additional capital from equity or debt sources during the pendency of the Nano Merger have raised substantial doubt as to our ability to continue as a going concern.

As described more fully in Part II, Item 7 – *Management’s Discussion and Analysis of Financial Condition and Results of Operations – “Liquidity and Capital Resources,”* we believe that there is substantial doubt as to our ability to continue as a going concern within one year after the date that the financial statements for fiscal year 2024 are issued. This determination is based on a number of factors, including our history of net losses and negative cash flows, substantial ongoing payment obligations, and restrictions on our ability to raise additional capital from equity or debt sources during the pendency of the Nano Merger.

In recent years, we have incurred significant net losses and negative cash flows. For example, we incurred net losses of $85.6 million and $103.6 million for the years ended December 31, 2024 and 2023, respectively. In addition, during the years ended December 31, 2024 and 2023, we generated net negative cash flows from operations of $61.3 million and $48.9 million, respectively. In addition, we have experienced declining revenue in recent years. For example, for the years ended December 31, 2024 and 2023, our revenue was $85.1 million and $93.8 million, respectively. The combination of net losses, negative cash flows and declining revenues presents substantial liquidity risks and may lead to diminished investor confidence, hindered growth prospects, reputational harm, and operational reductions.

We are also subject to substantial ongoing payment obligations, which may pose a significant liquidity challenge going forward and may impact our ability to meet future financial commitments. For example, under the terms of the Settlement Agreement entered into with Continuous Composites, we paid an initial $18 million settlement payment to Continuous Composites on October 10, 2024, and are required to make three additional installment payments of $1 million, $2 million and $4 million in the fourth quarters of fiscal years 2025, 2026 and 2027, respectively.

Furthermore, our liquidity is impacted by operating restrictions imposed under the Nano Merger Agreement. For example, our ability to raise capital through any equity or debt financing is restricted during the pendency of the Nano Merger pursuant to the terms of the Nano Merger Agreement, which could make it more difficult for us to access capital sources needed to meet our financial commitments.

We also continue to incur significant transaction related expenses, together with our operating costs, including payments to service providers and vendors. For example, we have incurred substantial transaction costs associated with the pending Nano Merger which totaled approximately $4.9 million as of December 31, 2024, and we anticipate additional transaction costs related to the Nano Merger will continue to be incurred in fiscal year 2025. While we have enacted cost savings measures to preserve capital in the past, our anticipated expenses are likely to continue to be significant. For more information on transaction related expenses relating to the Nano Merger, please reference the Risk Factor section entitled "Risks Related to the Proposed Merger with Nano Dimension Ltd. – *We have incurred, and will continue to incur, significant direct and indirect costs as a result of the pending Nano Merger."*

Our ability to continue as a going concern is dependent upon, among other factors, our ability to increase revenues and adequately manage operating expenses. No assurance can be given that we will be successful in these efforts. As a result, the substantial doubt as to our ability to continue as a going concern may adversely impact the per share price of our Common Stock, our reputation and relationship with investors, employees and third parties with whom we do business, our ability to meet contractual obligations, and our ability to achieve our business objectives, all of which could materially and adversely impact our business, financial condition and results of operations.

We have a history of net losses and may not be able to achieve profitability for any period in the future or sustain cash flow from operating activities.

We had a history of operating losses since inception in 2013 through 2024 and funded our cash flow deficits primarily through the issuance of capital stock. As of December 31, 2024, we had an accumulated deficit of $290.2 million, including current year net loss of $85.6 million. We expect to continue to incur operating losses and negative cash flow as we continue to invest significantly in research and development efforts and other aspects of our business.

We cannot make any assurances that these investments will result in increased revenue or growth in our business. Furthermore, we may encounter unforeseen issues that require us to incur additional costs. Any such increased expenditures make it harder for us to achieve and maintain future profitability. Revenue growth and growth in our customer base may not be sustainable, and we may not achieve sufficient revenue to achieve or maintain profitability. While we have a revenue history, we expect to bring new additive manufacturing products to market that we anticipate will generate a substantial portion of our future revenue, and it is difficult for us to predict our future operating results. We may incur significant losses in the future for a number of reasons, including due to the other risks described in this Annual Report on Form 10-K, and we may encounter unforeseen expenses, difficulties, complications and delays and other unknown events. As a result, our losses may exceed forecasts, we may incur significant losses for the foreseeable future, and we may not achieve profitability when expected, or at all, and even if we do, we may not be able to maintain or increase profitability. Accordingly, if we are not able to achieve or maintain profitability and we incur significant losses in the future, the market price of our Common Stock may decline, and you could lose part or all of your investment.

We have a relatively limited operating history and have experienced rapid growth since our inception, which makes evaluating our current business and future prospects difficult and may increase the risk of your investment.

Our ability to forecast our future operating results is subject to a number of uncertainties, including our ability to plan for and model future growth. We have encountered, and will continue to encounter, risks and uncertainties frequently experienced by growing companies in rapidly evolving industries, as we continue to grow our business. If our assumptions regarding these uncertainties, which we use to plan our business, are incorrect or change in reaction to changes in our markets, or if we do not address these risks successfully, our operating and financial results could differ materially from our expectations, our business could suffer and the trading price of our Common Stock may decline. We intend to derive a substantial portion of our revenues from sales of new and existing hardware products, which sales are non-recurring and subject to significant risk and fluctuation.

It is difficult to predict our future revenues and appropriately budget for our expenses, and we have limited insight into trends that may emerge and affect our business. If actual results differ from our estimates or we adjust our estimates in future periods, our operating results and financial position could be materially affected.

Our operating results have and may continue to fluctuate significantly from period-to-period and may fall below expectations in any particular period, which could adversely affect the market price of our Common Stock.

Our quarterly and annual results of operations have and may continue to fluctuate significantly from period-to-period. Accordingly, the results of any one quarter or year should not be relied upon as an indication of future performance. If our revenue or operating results fall below the expectations of investors or any securities analysts that follow our company in any period, the price of our Common Stock would likely decline. Each of the risks described in this section, as well as other factors, may affect our operating results. For example, factors that may cause our operating results to fluctuate include:

- expectations regarding consummation of the Nano Merger;
- the outcome of litigation relating to the Nano Merger;
- restrictions on our business and operating activities during the pendency of the Nano Merger;
- perceptions as to our ability to continue as a going concern among customers, vendors, employees and other third parties;
- the potential delisting of our Common Stock if we fall out of compliance with the NYSE’s minimum bid price listing requirements again in the future;
- the degree of market acceptance of our products;
- our ability to compete with competitors and new entrants into our markets;
- changes in our pricing policies or those of our competitors, including our response to price competition;
- the effectiveness of our securing new orders and fulfilling existing orders;
- the impact of supply chain disruptions on our customers, suppliers, manufacturers and operations;
- the impact of import and/or export tariffs on the prices of products and goods essential to our business;
- the mix of products that we sell during any period;
- the timing of our sales and deliveries of our products to customers;
- changes in the amount that we spend to develop and manufacture new products or technologies;
- timing of expenditures to develop and bring to market new or enhanced products and the generation of revenue from those products;
- changes in the amounts that we and our VARs spend to promote our products;
- changes in the cost of satisfying our warranty obligations and servicing our products, including with respect to our obligations related to our “success plan” offerings;
- litigation and settlement-related expenses and/or liabilities;
- unforeseen liabilities or difficulties in integrating our acquisitions or newly acquired businesses;
- disruptions to our internal and third-party manufacturing facilities and processes;
- disruptions to our information technology systems or our third-party contract manufacturers;
- disruptions to our global supply and distribution chains;
- third party claims of intellectual property rights infringement;
- the geographic distribution of our sales, and any related effects of foreign exchange rate fluctuations for sales and expenses that are not in U.S. dollars;

- general economic and industry conditions that affect our costs and/or customer demand, such as increases inflation and interest rates, general economic slowdown and potential for recession; and
- changes in accounting rules and tax laws.

In addition, sales of our products are subject to the adoption and capital expenditure cycles of our customers' sales cycle, and seasonality among our customers may cause our revenues and operating results to fluctuate from period to period. Accordingly, we typically experience increased sales during the fourth quarter and, to a lesser extent, the third quarter of our fiscal year relative to the first and second quarters. Additionally, for our more complex solutions, which may require additional facilities investment and installation support, potential customers may spend a substantial amount of time performing internal assessments prior to making a purchase decision. This may cause us to devote significant effort in advance of a potential sale without any guarantee of receiving any related revenues. As a result, revenues and operating results for future periods are difficult to predict with any significant degree of certainty, which could lead to adverse effects on our inventory levels and overall financial condition. Accordingly, you should not rely on quarter-over-quarter and year-over-year comparisons of our results as an indicator of our future performance.

Global economic, political and social conditions and uncertainties in the markets that we serve may adversely impact our business.

Our performance depends on the financial health and strength of our customers, which in turn is dependent on the economic conditions of the markets in which we and our customers operate. Declines in the global economy, difficulties in the financial services sector and credit markets, continuing geopolitical uncertainties, and other macroeconomic factors all affect the spending behavior of potential customers. Economic uncertainty in Europe, the United States, India, Japan, China and other countries may cause customers and potential customers to further delay or reduce technology purchases. For example, since the first quarter of 2022, we have experienced reduced demand from European markets. In addition, the potential imposition of import and export tariffs could significantly increase our operational costs, disrupt supply chains, and reduce our competitiveness in global markets.

We also face risks from financial difficulties or other uncertainties experienced by our suppliers, distributors or other third parties on which we rely. If third parties are unable to supply us with required materials or components or otherwise assist us in operating our business, our business could be harmed.

Adverse developments affecting the financial services industry or other third parties, such as a liquidity crisis, increased levels of defaults or non-performance by financial institutions or transactional counterparties or the perception that any of these events could occur, could adversely affect our current and projected business operations and our financial condition and results of operations.

Adverse developments that affect financial institutions, transactional counterparties or other third parties, or concerns or rumors about any events of these kinds or other similar risks, have in the past and may in the future lead to market-wide liquidity problems. Although we regularly assess and adjust our banking and other financial services relationships as we believe necessary or appropriate, our access to our deposits, investments, funding sources, credit and other arrangements in amounts adequate to maintain our projected business operations could be significantly impaired by factors outside of our control. These factors could include, among others, events such as liquidity constraints or failures, the inability of third parties to meet their obligations under various types of financial arrangements, general disruptions or instability in the financial services industry or financial markets, or concerns or negative expectations about the prospects for companies in the financial services industry. These factors could involve financial institutions or financial services industry companies with which we have financial or business relationships, but could also include factors involving financial markets or the financial services industry generally.

For example, in March 2023, the Federal Deposit Insurance Corporation took control and was appointed receiver for each of Silicon Valley Bank ("SVB"), Signature Bank ("Signature") and Silvergate Capital Corp, ("Silvergate"), followed by First Republic Bank in May 2023. As of the date of this Annual Report on Form 10-K, our exposure to SVB, Signature and Silvergate is immaterial, however, we regularly maintain cash balances at third-party financial institutions in excess of the Federal Deposit Insurance Corporation insurance limit. If any of the financial institutions with which we do business were to be placed into receivership, we may be unable to access our capital or adequately fund our business for a prolonged period of time, or at all. In addition, if any of our customers, suppliers or other parties with whom we conduct business are unable to access funds pursuant to their arrangements with such a financial institution, their ability to pay their obligations to us or to enter into new commercial arrangements requiring additional payments to us could be adversely affected, which could result in material losses to us and may have material adverse impacts on our business.

In addition, uncertainty remains over liquidity concerns in the broader financial services industry, and there may be additional impacts to our business and our industry that we cannot predict at this time. Inflation and rapid increases in interest rates have led to a decline in the trading value of previously issued government securities with interest rates below current market interest rates. Although the U.S. Department of Treasury, FDIC and Federal Reserve Board have announced a program to provide up to $25 billion of loans to financial institutions secured by certain of such government securities held by financial institutions to mitigate the risk of potential losses on the sale of such instruments, widespread demands for customer withdrawals or other liquidity needs of financial institutions for immediate liquidity may exceed the capacity of such program. There is no guarantee that the U.S. Department of Treasury, FDIC and Federal Reserve Board will provide access to uninsured funds in the future in the event of the closure of other banks or financial institutions, or that they would do so in a timely fashion.

The results of events or concerns that involve one or more of these factors could include a variety of material and adverse impacts on our current and projected business operations and our financial condition and results of operations. These could include, but may not be limited to, the following:

- Delayed access to deposits or other financial assets or the uninsured loss of deposits or other financial assets;
- Loss of access to certain working capital sources and/or the inability to refund, roll over or extend the maturity of, or enter into new credit facilities or other working capital resources;
- Potential or actual breach of contractual obligations that require us to maintain letters or credit or other credit support arrangements; or
- Termination of cash management arrangements and/or delays in accessing or actual loss of funds subject to cash management arrangements.

In addition, widespread investor concerns regarding the U.S. or international financial systems could result in less favorable commercial financing terms, including higher interest rates or costs and tighter financial and operating covenants, or systemic limitations on access to credit and liquidity sources, thereby making it more difficult for us to acquire financing on acceptable terms or at all. Any decline in available funding or access to our cash and liquidity resources could, among other risks, adversely impact our ability to meet our operating expenses, financial obligations or fulfill our other obligations, result in breaches of our financial and/or contractual obligations or result in violations of federal or state wage and hour laws. Any of these impacts, or any other impacts resulting from the factors described above or other related or similar factors not described above, could have material adverse impacts on our liquidity and our current and/or projected business operations and financial condition and results of operations.

Risks Related to the Additive Manufacturing Industry

The additive manufacturing industry in which we operate is characterized by rapid technological change, requiring continual innovation and development of new products and innovations to meet constantly evolving customer demands.

Our revenues are derived from the sale of 3D printers, related materials, software, and services. The additive manufacturing market is subject to rapid innovation and technological change and our customers' needs are rapidly evolving. While we intend to invest substantial resources to remain on the forefront of technological development, continuing advances in additive manufacturing technology, changes in customer requirements and preferences and the emergence of new standards, regulations and certifications could adversely affect adoption of our products. Our ability to compete in the additive manufacturing market depends, in large part, on our success in developing and introducing new 3D printers and technology, in improving our existing products and technology and qualifying new materials which our systems can support. We believe that we must continuously enhance and expand the functionality and features of our products and technologies in order to remain competitive. However, we may not be able to:

- predict future customer demand;
- develop cost effective new products and technologies that address the increasingly complex needs of prospective customers;
- enhance our existing products and technologies;
- respond to technological advances and emerging industry standards and certifications on a cost-effective and timely basis;
- adequately protect our intellectual property as we develop new products and technologies;
- identify the appropriate technology or product to which to devote our resources; or
- ensure the availability of cash resources to fund research and development.

Even if we successfully introduce new additive manufacturing products and technologies and enhance our existing products and technologies, it is possible that these will eventually supplant our existing products or that our competitors will develop new products and technologies that will replace our own. As a result, any of our products may be rendered obsolete or uneconomical by our or our competitors' technological advances, leading to a loss in market share, decline in revenue and adverse effects to our business and prospects.

We face intense and growing competition in the additive manufacturing industry. Our inability to compete effectively with our competitors could affect our ability to achieve our anticipated market penetration and achieve or sustain profitability.

The additive manufacturing industry in which we operate is highly competitive. We compete for customers with a wide variety of producers of additive manufacturing equipment that creates 3D objects and end-use parts, as well as with providers of materials and services for this equipment. Some of our existing and potential competitors are researching, designing, developing and marketing other types of products and services that may render our existing or future products obsolete, uneconomical or less competitive. Existing and potential competitors may also have substantially greater financial, technical, marketing and sales, manufacturing, distribution and other resources than us, including name recognition, as well as experience and expertise in intellectual property rights and operating within certain international markets or industry verticals, any of which may enable them to compete effectively against us. Moreover, many of our competitors have more extensive customer and partner relationships than we do, and may therefore be in a better position to identify and respond to market developments or changes in customer demands, including successfully developing technologies that outperform our technologies. Potential customers may also prefer to purchase from their existing suppliers rather than a new supplier regardless of product performance or features. For example, a number of companies that have substantial resources have announced that they are beginning production of 3D printers, which will further enhance the competition we face.

In addition, independent suppliers offer non-original supplies (including imitation, refill and remanufactured alternatives), which are often available for lower prices but which can also offer lower print quality and reliability compared to our supplies. If our customers utilize these non-original supplies with our printers, it could adversely impact our operating results and may have a negative impact on our brand.

Future competition may arise from the development of allied or related techniques for equipment, materials, software and services 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.

We intend to continue to follow a strategy of continuing product development, VAR and distribution network expansion to enhance our competitive position to the extent practicable. But 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. If we do not keep pace with technological change and introduce new products and technologies, demand for our products may decline, and our operating results may suffer.

Declines in the prices of our products and services, or in our volume of sales, together with our relatively inflexible cost structure, may adversely affect our financial results.

Our business is subject to price competition. Such price competition may adversely affect our results of operation, especially during periods of decreased demand. Decreased demand also adversely impacts the volume of our sales. If our business is not able to offset price reductions resulting from these pressures, or decreased volume of sales due to contractions in the market, by improved operating efficiencies and reduced expenditures, then our operating results will be adversely affected.

Although we generally do not have long-term supply agreements, certain of our operating costs are fixed and cannot readily be reduced, which has an impact on our operating results. To the extent the demand for our products slows, or the additive manufacturing market contracts, we may be faced with excess manufacturing capacity and related costs that cannot readily be reduced, which will adversely impact our financial condition and results of operations. Conversely, because we generally do not have long-term supply agreements, we have recently experienced and expect to continue to be subject to the risk of significant cost increases and parts shortages by our suppliers, or decisions by our suppliers to cease selling certain parts and materials to us.

Increased consolidation among our customers, suppliers and competitors in the additive manufacturing industry may have an adverse effect on our business and results of operations.

Increased consolidation in the additive manufacturing industry among our customers, suppliers and competitors may adversely affect our business and results of operations. Customer consolidation could lead to changes in buying patterns, slowdowns in spending, and impact our distribution channels. Moreover, the significant purchasing power of these large companies can increase pricing and competitive pressures for us, including the potential for decreases in our average selling prices. If one of our customers is acquired by another company that does not rely on us to provide it with products or relies on another provider of similar products, we may lose that customer’s business. Any of the foregoing results will adversely affect our business, financial condition and results of operations.

In addition, supplier consolidation may lead to increased prices of materials for our products, deployment delays and/or a disruption in output. In addition, such consolidation may exacerbate the risks relating to our dependence on a small number of suppliers for certain materials that are required to manufacture our products.

We may experience significant delays in the design, production and launch of our additive manufacturing solutions and enhancements to existing products, and we may be unable to successfully commercialize products on our planned timelines.

We have several additive manufacturing solutions and enhancements to existing products that are still under development. There are often delays in the design, testing, manufacture and commercial release of new products, and any delay in the launch of our products could materially damage our brand, business, growth prospects, financial condition and operating results. For example, we experienced production challenges meeting demand for our FX20 printer, including issues procuring materials and production constraints, which limited revenue during 2022, and initial production costs exceeded targets negatively impacting our gross margin. Even if we successfully complete the design, testing and manufacture for one or all of our products or enhancements under development, we may fail to develop a commercially successful product on the timeline we expect for a number of reasons, including:

- restrictions on our business and operating activities during the pendency of the Nano Merger;
- misalignment between the products and customer needs;
- length of sales cycles;
- insufficient product innovation;
- product quality and performance issues;
- insufficient resources or qualified personnel to develop the product;
- failure of the product to perform in accordance with the customer’s expectations and industry standards;
- inability to procure parts of adequate quality needed to build the product on commercially acceptable terms, or at all;
- insufficient labor or process stability to build the product to required specifications;
- ineffective distribution, sales and marketing;
- delay in obtaining, or failure to obtain, any required regulatory approvals;
- the impact of future health epidemics on production, distribution and demand for our products;
- increased production costs, including due to general inflationary pressures on the supplies we procure, and unexpected delays; or
- release of competitive products.

Our success in the market for the new products we develop will depend in part on our ability to prove our new products’ capabilities in a timely manner. Until demonstration, our customers may not believe that our products and/or technology have the capabilities they were designed to have or that we believe they have. Furthermore, even if we do successfully demonstrate our products’ capabilities, potential customers may be more comfortable doing business with a competitor, including another larger and more established company, may take longer than expected to make the decision to order our products, or may not have the budget or decision-making authority to purchase the product. Significant revenue from new product investments may not be achieved for a number of years, if at all. If the timing of our launch of new products and/or of our customers’ acceptance of such products is different than our assumptions, our revenue and results of operations may be adversely affected.

Changes in our product mix may impact our gross margins and financial performance.

Our financial performance may be affected by the mix of products and services we sell during a given period. We expect to continue to offer products at a variety of price points. Sales of certain of our products have, or are expected to have, higher gross margin contributions than others. If our product mix shifts too far into lower gross margin products, or we are unable to maintain or increase gross margins, and we are not able to sufficiently reduce the engineering, production and other costs associated with those products or substantially increase the sales of our higher gross margin products, our profitability could be reduced. Additionally, the introduction of new products or services may further heighten quarterly fluctuations in gross profit and gross profit margins due to manufacturing ramp-up and start-up costs. Relatedly, if our product mix shifts such that our production rates decrease, our product costs and margins may be negatively impacted. We may experience significant quarterly fluctuations in gross profit margins or operating income or loss due to the impact of the mix of products, channels or geographic areas in which we sell our products from period to period.

Risks Related to Our Business Operations

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, our competitors' pricing and marketing strategies, general inflationary pressures, our customers' budgets, the value our products bring to our customers and our desire to hit revenue goals 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, results of operations and brand could suffer.

Our revenue model is evolving and we may introduce new revenue models or avenues that may not be accepted by our customers and as such will not materialize.

We depend on our network of VARs and other distribution partners and if we fail to maintain successful relationships, or if they fail to perform, our ability to market, sell and distribute our products will be limited, and our business, financial position and results of operations will be harmed.

We rely heavily on our global network of VARs and other distribution partners to sell our products and to provide installation and support services to customers in their respective geographic regions. These VARs and other distribution partners may not be as effective in selling our products or installing and supporting our customers as we expect. Moreover, a VAR or other distribution partner may misrepresent the capabilities of our products without our knowledge either intentionally or unintentionally due to the inherent complexity of our products. Further, our VARs and other distribution partners can terminate their contracts with us at any time, and if our contracts with a significant number of VARs and other distribution partners, or with the most effective VARs and other distribution partners, were to terminate or if they would otherwise fail or refuse to sell certain of our products, we may not be able to find replacements that are as qualified or as successful in a timely manner, if at all.

Recruiting and retaining qualified VARs and other distribution partners and training them in our technologies requires significant time and resources. These VARs and other distribution partners may also market, sell and support other technologies in unrelated markets and may devote more resources to the marketing, sales and support of such products.

In addition, if our VARs and other distribution partners do not perform as anticipated, or if we are unable to secure qualified and successful VARs and other distribution partners, our sales will suffer, which would have an adverse effect on our revenues and operating results. Because we also depend upon our VARs and other distribution partners to provide installation and support services for products, if our VAR or distribution partner relationships were terminated or limited to certain products, we may face disruption in providing support for our customers, which would adversely affect our brand, reputation and our results of operations. Any failure to offer high-quality technical support services may adversely affect our relationships with our customers and adversely affect our financial results and brand.

Further, we require that our VARs and other distribution partners adhere to all local laws and regulations, but it is possible that a VAR or other distribution partner could violate such laws or regulations, which could adversely impact our business, reputation and financial results and brand. Our indirect sales and distribution model could subject us to lawsuits, potential liability and brand and reputational harm if, for example, any of our VARs and other distribution partners misrepresent the functionality of our products or services to customers or violate laws or our corporate policies.

Additionally, a default by one or more VARs or other distribution partners with whom we have a significant receivables balance could have an adverse financial impact on our financial results. As of December 31, 2024 no one customer represented greater than 10% of the accounts receivable balance. In the event that this customer or any of our large customers do not continue to purchase our products or purchase fewer of our products, our business, results of operations and financial condition could be adversely affected. We have reviewed our policies that govern credit and collections and will continue to monitor them in light of current payment status and economic conditions. In addition, we try to reduce the credit exposures of our accounts receivable by instituting credit limits and additional checks. However, there can be no assurance that our efforts to identify potential credit risks will be successful. Our inability to timely identify VARs and other distribution partners that are credit risks could result in defaults at a time when such VARs and other distribution partners have high accounts receivable balances with us. Any such default would result in a significant charge against our earnings and adversely affect our results of operations and financial condition.

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

As a result of supply chain disruptions, the rise of inflation, changes in trade policies such as increased tariffs on materials we use in our business, rationing measures, labor shortages, civil unrest and war, and climate change, we have experienced increasing costs and supply shortages. For example, we recently experienced longer lead times and capacity constraints in connection with the raw resources required to manufacture our printing material and we are also facing increased prices in connection with the procurement of the electronic components and custom metal fabricated parts for our printers, including our FX20 printer. We acquire certain of our materials, which are critical to the ongoing operation and future growth of our business, from several third parties. Generally, our third-party contract manufacturers contract directly with component suppliers with our guidance. We rely on our contract manufacturers to manage their supply chains. If one of our contract manufacturers has supply chain disruptions, or our relationship with our contract manufacturer terminates, we could experience delays. We also source some materials directly from suppliers. While most manufacturing equipment and materials for our products are available from multiple suppliers, certain of those items are only available from limited sources. Should any of these suppliers 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. As a result, the loss of a limited source supplier could adversely affect our brand and relationship with our customers as well as our results of operations and financial condition.

In the case of certain materials, we have specified a certain grade of a product to be used in our manufacturing process. While there are several potential suppliers of most of these component materials that we use, we currently choose to use only one or a limited number of suppliers for several of these components and materials. For those materials, we could be impacted by any changes our suppliers make to such materials, which could include specification changes, lead time or cancellation of the material. If there is not an alternate product available, replacement thereof would require significant engineering and manufacturing efforts by us to qualify a replacement. Additionally, if a supplier of such materials decided to terminate their relationship with us, we may face delays in our production as we seek out a replacement supplier. Our reliance on a single or limited number of vendors involves a number of risks, including:

- potential shortages and cost increases of some key components;
- product performance shortfalls, if traceable to particular product components, since the supplier of the faulty component cannot readily be replaced;
- discontinuation of a product or certain materials on which we rely;
- potential insolvency of these vendors;
- vendors may discontinue producing a particular product component, or discontinue selling us particular components; and
- reduced control over delivery schedules, manufacturing capabilities, quality and costs.

In addition, we evaluate new suppliers pursuant to our internal procedures. This process involves evaluations of varying durations, which may cause production delays if we were required to qualify a new supplier unexpectedly. We generally assemble our systems and parts based on our internal forecasts and the availability of raw materials, assemblies, components and finished goods that are supplied to us by third parties, which are subject to various lead times. If certain suppliers were to decide to discontinue production of an assembly, component or raw material that we use, the unanticipated change in the availability of supplies, or unanticipated supply limitations, could cause delays in, or loss of, sales, increased production or related costs and consequently reduced margins, and damage to our reputation. If we were unable to find a suitable supplier for a particular component, material or compound, we could be required to modify our existing products or the end-parts that we offer to accommodate substitute components, material or compounds. While we monitor risk internally related to our sourcing (particularly concerning raw materials), there is no guarantee that will sufficiently protect us if we suddenly lose access to supplies unexpectedly.

Any shortage of a particular component, material or compound could materially and adversely affect our ability to manufacture our products and could lead to increased costs to acquire such resources which could adversely affect our business and financial condition. We have in the past experienced and may in the future experience materials shortages and price fluctuations of certain key components, materials and compounds, and the predictability of the availability and pricing of these components, materials and compounds may be limited. Shortages of components, materials or compounds or pricing fluctuations could be material in the future. In the event of a components, materials or compounds shortage, supply interruption or material pricing change from suppliers of these components, materials or compounds, we may not be able to develop alternate sources in a timely manner or at all in the case of sole or limited sources. Developing alternate sources of supply for these components, materials or compounds may be time-consuming, difficult, and costly and we may not be able to source these components, materials or compounds on terms that are acceptable to us, or at all, which may undermine our ability to meet our requirements or to fill customer orders in a timely manner. Any interruption or delay in the supply of any of these components, materials or compounds, or the inability to obtain these components, materials or compounds from alternate sources at acceptable prices and within a reasonable amount of time, would adversely affect our ability to meet our scheduled product deliveries to our customers. This could adversely affect our relationships with our customers and VARs and could cause delays in shipment of our products and adversely affect our operating results. In addition, increased component, material or compound costs could result in lower gross margins. Even where we are able to pass increased costs along to our customers, there may be a lapse of time before we are able to do so such that we must absorb the increased cost. If we are unable to buy these components, materials or compounds in quantities sufficient to meet our requirements on a timely basis, we will not be able to deliver products to our customers, which may result in such customers using competitive products instead of ours.

We have experienced minor delays on the inbound supply chain at our partners and our own facilities. Additional delays on both inbound and outbound logistics have also created challenges. We have been able to identify alternative solutions such that none of the issues has had a material impact on our ability to fulfill demand. If disruptions to global businesses continue or worsen, our business could face greater supply chain delays and difficulty shipping or receiving products and materials, which could have a material adverse effect on our financial condition and results of operations.

While we believe that, if necessary, we can obtain all the components necessary for our spare parts and materials from other manufacturers, we will need to guide any new manufacturers through evaluation processes of varying durations. Our spare parts and raw materials used in our materials production are subject to various lead times. Any unanticipated change in the sources of our supplies, or unanticipated supply limitations, could increase production or related costs and consequently reduce margins.

If our forecasts exceed actual orders, we may hold inventories of slow-moving or unusable parts, which could have an adverse effect on our cash flow, profitability, and results of operations. Inversely, we may lose orders if our forecast is low and we are unable to meet demand.

Our business model is predicated, in part, on developing or expanding recurring revenues through the sale of our hardware, consumables, and services. If that recurring stream of revenues does not develop as expected, or if our business model changes as the industry evolves, our operating results may be adversely affected.

Our business model is dependent, in part, on our ability to develop, maintain and increase sales of our hardware, consumables, and services as they generate recurring revenues. Existing and future customers of our systems may not purchase our consumables and services at the same rate at which customers currently purchase those offerings. If our current and future customers purchase a lower volume of our consumables and services, resulting overall in lower purchases of consumables and services on average than with our current installed customer base, our recurring revenue stream relative to our total revenues would be reduced and our operating results would be adversely affected.

We rely on a limited number of third-party logistics providers for distribution of our products, and their failure to distribute our products effectively and in a cost effective manner would adversely affect our sales.

We rely on a limited number of third-party logistics providers for shipping our products. Each third-party logistics provider stores our products in a limited number of warehouses where they prepare and ship our products based on digital instructions. The use of a limited number of third-party logistics providers increases the risk that a fire or damage from another type of disaster at any of the warehouses may result in a disruption of our commercialization efforts. Additionally, because we use a limited number of third-party logistics providers, if there is a disruption in the distribution channels of such third-party logistics providers, including but not limited to any disruption caused by global shipping capacity, labor shortages, or if these providers continue to increase their rates, our business and financial condition could be adversely impacted.

If our third-party logistics providers do not fulfill their contractual obligations to us, or refuse or fail to adequately distribute our products, such as by shipping our products to the incorrect recipient, or the agreements are terminated without adequate notice, shipments of our products, and associated revenues, would be adversely affected. In addition, we expect that it may take a significant amount of time if we were required to change our third-party logistics providers and would require significant efforts to provide the systems support required for a new provider to effectively support our operations.

If demand for our products does not grow as expected, or if market adoption of additive manufacturing does not continue to develop, or develops more slowly than expected, our revenues may stagnate or decline, and our business may be adversely affected.

We believe that the industrial manufacturing market, which today is dominated by conventional manufacturing processes that do not involve additive manufacturing technology, is undergoing a shift towards additive manufacturing for end-use production as well as factory line support. We may not be able to develop effective strategies to raise awareness among potential customers of the benefits of additive manufacturing technologies or our products may not address the specific needs or provide the level of functionality required by potential customers to encourage the continuation of this shift towards additive manufacturing. We must anticipate, sometimes several years in advance, the direction that the additive market is taking. We may not correctly anticipate the direction, which may lead us to invest in the wrong products, which may adversely affect our results of operation and financial condition. If additive manufacturing technology does not continue to gain broader market acceptance as an alternative to conventional manufacturing processes, or if the marketplace adopts additive manufacturing technologies that differ from our technologies, we may not be able to increase or sustain the level of sales of our products, and our operating results would be adversely affected as a result.

Defects in new products or in enhancements to our existing products that give rise to product returns or warranty or other claims could result in material expenses, diversion of management time and attention and damage to our reputation.

Our additive manufacturing solutions are complex and may contain undetected defects or errors when first introduced or as enhancements are released that, despite testing, are not discovered until after a machine has been used. We may not know which products are affected by defects. These defects could be systemic and could affect all of the products we shipped prior to discovery thereof. It may not be economically feasible to identify, replace or repair all affected products. In the event that the defect is severe enough or impacts customer safety, a product recall may be required. This could result in delayed market acceptance of those products or claims from VARs, customers or others, which may result in litigation, increased customer warranty, support and repair or replacement costs, damage to our reputation and business, or significant costs and diversion of support, management and engineering personnel to correct the defect or error. We may from time to time become subject to warranty or product liability claims related to product quality issues that may require us to take remedial action and could, regardless of merit, lead us to incur significant expenses, result in diversion of management time and attention, damage to our business and reputation and brand, and cause us to fail to retain existing customers or fail to attract new customers.

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

We may be unable to consistently manufacture our products to the necessary specifications or in quantities necessary to meet demand at an acceptable cost or at an acceptable performance level.

Our products are integrated solutions with many different components that work together. As such, a quality defect in a single component can compromise the performance of the entire solution. As we continue to grow and introduce new products, and as our products incorporate increasingly sophisticated technology, such as our PX100 system, which is the largest and most complex printer we have ever developed, it will be increasingly difficult to ensure our products are produced in the necessary quantities without sacrificing quality. There is no assurance that we or our third-party manufacturers and any component suppliers will be able to continue to manufacture our products so that they consistently achieve the product specifications and quality that our customers expect. Relatedly, certain of our components are sourced by a single supplier and, if the supply were to become disrupted as a result of insufficient quality, service delays or any other factor, our manufacturing efforts could be adversely affected. Any future design issues, unforeseen manufacturing problems, such as contamination of our or such third-party facilities, equipment malfunctions, aging components, component obsolescence, business continuity issues, quality issues with components and materials sourced from third party suppliers, or failures to strictly follow procedures or meet specifications, may have a material adverse effect on our brand, business, financial condition and operating results. Furthermore, we or our third-party manufacturers may not be able to increase manufacturing to meet anticipated demand or may experience downtime.

In order to meet our customers' needs, we attempt to forecast demand for our products and components used for the manufacture of our products. If we fail to accurately forecast this demand, we could incur additional costs or experience manufacturing delays and may experience lost sales or significant inventory carrying costs.

The risk of manufacturing defects or quality control issues is generally higher for new products, whether produced by us or a third-party manufacturer, products that are transitioned from one manufacturer to another, particularly if manufacturing is transitioned or initiated with a manufacturer we have not worked with in the past, and products that are transferred from one manufacturing facility to another. We cannot assure investors that we and our third-party manufacturers will be able to launch new products on time, transition manufacturing of existing products to new manufacturers, transition our manufacturing capabilities to a new location or transition manufacturing of any additional materials in-house without manufacturing defects. An inability to manufacture products and components that consistently meet specifications, in necessary quantities and at commercially acceptable costs will have a negative impact and may have a material adverse effect on our brand, business, financial condition and results of operations.

Our commercial contracts generally contain product warranties and limitations on liability and we carry liability insurance in amounts that we believe are adequate for our risk exposure and commensurate with industry norms. However, commercial terms and our insurance coverage may not be adequate or available to protect our company in all circumstances, and we might not be able to maintain adequate insurance coverage for our business in the future at an acceptable cost. Any liability claim against us that is not covered by adequate insurance could adversely affect our consolidated results of operations and financial condition. Finally, any liability claim against us may cause harm to our brand, reputation and adversely impact our business.

We are dependent on the continued services and performance of our senior management and other key employees, as well as on our ability to successfully hire, train, manage and retain qualified personnel.

Our future performance depends on the continued services and contributions of our executive team and other key employees to execute on our business plan and to identify and pursue new opportunities and product innovations. Such persons may resign at any time and the loss of their services could delay or prevent the successful implementation of our strategy, commercialization of new applications for our systems or other products, or could otherwise adversely affect our ability to manage our company effectively and carry out our business plan. There is no assurance that if any senior executive or other key employee leaves in the future, we will be able to rapidly replace him or her and transition smoothly towards his or her successor, without any adverse impact on our operations.

Our ability to successfully pursue our growth strategy will also depend on our ability to attract, motivate and retain existing and new personnel. We experience intense competition for qualified senior management and other key personnel (including scientific, technical, manufacturing, engineering, financial and sales personnel) in the additive manufacturing industry, especially in the greater Boston area. In addition, we have experienced increased competition and shortages for skilled labor, particularly for the key roles noted above. Our ability to hire, terminate and promote employees, and offer cash raises and/or equity-based incentive awards to existing or prospective employees is also restricted during the pendency of the Nano Merger, pursuant to the terms of the Nano Merger Agreement, which may inhibit our ability to attract and retain key employees. These risks to attracting and retaining the necessary talent may be exacerbated by recent labor constraints and inflationary pressures on employee wages and benefits. Our personnel are generally employed on an at-will basis, which means that they could terminate their employment with us at any time. There can be no assurance that we will be able to retain our current key personnel or attract new persons to join our organization in the future. Some of our competitors for these employees have greater resources and more experience, making it difficult for us to compete successfully for key personnel. If our stock does not perform as well as other companies' our equity incentive programs may have reduced retentive value. These pressures could result in increased costs in order to provide competitive compensation packages to attract and retain key personnel. Moreover, new employees may not be as productive as we expect since we may face challenges in adequately integrating them into our workforce and culture. If we cannot attract and retain sufficiently qualified technical employees for our research product development activities, as well as experienced sales and marketing personnel, we may be unable to develop and commercialize new products and enhancements to existing products.

As manufacturing becomes a larger part of our operations, we will become exposed to the accompanying risks and liabilities.

In-house and outsourced manufacturing has been and continues to be a significant part of our business. As a result, we expect to continue to be subject to various risks associated with the manufacturing and supply of products, including the following:

- If we fail to supply products in accordance with contractual terms, including terms related to time of delivery and performance specifications, we may be required to repair or replace defective products and may become liable for direct, special, consequential and other damages, even if manufacturing or delivery was outsourced;
- Raw materials used in the manufacturing process, labor and other key inputs may become scarce, obsolete and expensive, causing our costs to exceed cost projections and associated revenues;
- Manufacturing processes typically involve large machinery, fuels and chemicals, any or all of which may lead to accidents involving bodily harm, destruction of facilities and environmental contamination and associated liabilities;
- As our manufacturing operations expand, we expect that a significant portion of our manufacturing will be done in regions outside the United States, either by third-party contractors or in a plant owned by us. Any manufacturing done in such locations presents risks associated with quality control, currency exchange rates, foreign laws and customs, timing and loss risks associated with international transportation and potential adverse changes in the political, legal and social environment in the host country, including the outbreak of war or sustained armed conflict in such host country or its geographic region;
- We have made, and may be required to make, representations as to our right to supply and/or license intellectual property and to our compliance with laws. Such representations are usually supported by indemnification provisions requiring us to defend our customers and otherwise make them whole if we license or supply products that infringe on third-party technologies or violate government regulations;

- As our manufacturing operations scale, so will our dependence on skilled labor at both in-house and third-party manufacturing facilities. If we are unable to obtain and maintain skilled labor resources, we may be unable to meet customer production demands; and
- With scaling production volume, demand for our products may make up a significant percentage of global volume in select categories or commodities. Such commodities could be subject to large pricing swings due to the global political, legal and social environment and could cause our costs to exceed productions and associated revenues.

Any failure to adequately manage risks associated with the manufacture and supply of materials and products could adversely affect profits from that segment of our business and/or lead to significant liabilities, which would harm our brand, business, operations and financial condition.

Under applicable employment laws, we may not be able to enforce covenants not to compete and therefore may be unable to prevent our competitors from benefiting from the expertise of some of our former employees.

We generally enter into non-competition agreements with our employees. These agreements prohibit our employees from competing directly with us or working for our competitors or clients for a limited period after they cease working for us. On April 23, 2024 the U.S. Federal Trade Commission (the “FTC”) published a final rule that prohibits post-employment non-compete clauses in agreements between employers and their employees except for existing agreements with senior executives who are paid over a threshold salary amount and are involved in policy decisions for the company. Legal challenges to the FTC’s rule-making authority were successful at the trial court level and the rule did not become effective on September 4, 2024 as originally contemplated. The FTC has appealed to the Fifth Circuit Court of Appeals and a decision is expected sometime in 2025. If the trial court’s decision is reversed and the FTC’s rule is upheld, it will thwart our ability to enforce employment-based non-competition agreements except for existing agreements with senior executives. Even if the rule is invalidated by the courts, we may be unable to enforce these agreements under the laws of the certain jurisdictions in which our employees work and it may be difficult for us to restrict our competitors from benefiting from the expertise that our former employees or consultants developed while working for us.

We expect to continue to experience organizational change. If we fail to manage this change effectively, we may be unable to execute our business plan, maintain high levels of service and customer satisfaction or attract new employees and customers.

We expect to continue to make significant investments in our business, including investments in our infrastructure, software, technology, personnel headcount, facilities, marketing and sales efforts. If our business does not generate the level of revenue required to support our investment, our net sales and profitability will be adversely affected.

To manage our operations and personnel, we will need to continue to scale and improve our operational, financial, and management controls, and our reporting systems and procedures, which will require significant capital expenditures, increasing our cost of operations and the reallocation of valuable management resources. As we scale, it may become more difficult and will require additional capital expenditures to maintain and increase the productivity of our employees, expand production, to address the needs of our actual and prospective customers, to further develop and enhance our products, and remain competitive against our competitors’ products. These enhancements and improvements will require significant capital expenditures, investments in additional headcount and other operating expenditures and allocation of valuable management and employee resources, including but not limited to investments related to our facilities. 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.

As we acquire and invest in companies or technologies, we may not realize expected business, technological or financial benefits and the acquisitions or investments could prove difficult to integrate, disrupt our business, dilute stockholder value and adversely affect our business, results of operations, and financial condition.

As part of our business strategy, we may evaluate and make investments in, or acquisitions of, complementary companies, products, software and technologies, to further grow and augment our business and product offerings. The success of any attempts to grow our business through acquisitions to complement our business depends in part on the availability of, our ability to identify, and our ability to engage and pursue suitable acquisition candidates. We may not be able to find suitable acquisition candidates, and we may not be able to complete acquisitions on favorable terms, if at all. Further, our ability to merge, consolidate with, or acquire any equity interests in, other companies is restricted during the pendency of the Nano Merger pursuant to the terms of the Nano Merger Agreement.

If we do complete future acquisitions, we cannot assure you that they will ultimately strengthen our competitive position or that they will be viewed positively by customers, financial markets or investors. Furthermore, future acquisitions could pose numerous additional risks to our operations, including:

- diversion of management’s attention from existing operations;
- unanticipated costs or liabilities associated with the acquisition, including risks associated with acquired intellectual property and/or technologies;
- incurrence of acquisition-related costs, which would be recognized as a current period expense;
- difficulties in, and the cost of, integrating personnel and cultures, operations, technologies, products and services which may lead to failure to achieve the expected benefits on a timely basis or at all;
- challenges in achieving strategic objectives, cost savings and other anticipated benefits;
- inability to maintain relationships with key customers, suppliers, vendors and other third parties on which the purchased business relies;
- the difficulty of incorporating acquired technology and rights into our products and product portfolio and of maintaining quality and security standards consistent with our brand;
- ineffective controls, procedures and policies inherited from the acquired company or during the transition and integration;
- inability to generate sufficient revenue to offset acquisition and/or investment costs;
- negative impact to our results of operations because of the depreciation of amounts related to acquired intangible assets, fixed assets, and deferred compensation;
- requirements to record certain acquisition-related costs and other items as current period expenses, which would have the effect of reducing our reported earnings in the period in which an acquisition is consummated;
- recording goodwill or other long-lived asset impairment charges in the periods in which they occur, which could result in a significant charge to our earnings in any such period;
- use of substantial portions of our available cash, issuance of dilutive equity or the incurrence of debt to consummate the acquisition;
- potential write-offs of acquired assets or investments, and potential financial and credit risks associated with acquired customers;
- tax effects and costs of any such acquisitions, including the related integration into our tax structure and assessment of the impact on the realizability of our future tax assets or liabilities;
- the potential entry into new markets in which we have little or no experience or where competitors may have stronger market positions; and
- currency and regulatory risks associated with conducting operations in foreign countries.

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 and opportunities, including the need to develop new features or enhance our products, improve our operating infrastructure or acquire complementary businesses and technologies. Accordingly, we may need to engage in equity or debt financings to secure additional funds if our existing sources of cash and any funds generated from operations do not provide us with sufficient capital. Current capital market conditions, including the impact of inflation, have increased borrowing rates and can be expected to significantly increase our cost of capital as compared to prior periods should we seek additional funding. Moreover, global capital markets have undergone periods of significant volatility and uncertainty in the past, and there can be no assurance that such financing alternatives will be available to us on favorable terms or at all, should we determine it necessary or advisable to seek additional capital. Further, our ability to raise capital through an equity or debt financing is restricted during the pendency of the Nano Merger pursuant to the terms of the Nano Merger Agreement. If we raise additional funds through future issuances of equity or convertible debt securities, our existing stockholders 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 that we may 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, and any new or refinanced debt may be subject to substantially higher interest rates, which could adversely affect our financial condition and impact our business. Recent quantitative tightening by the U.S. Federal Reserve, along with other central banks around the world, may further negatively affect our short-term ability or desire to incur debt. We may not be able to obtain additional financing on terms favorable to us, for example, if interest rates continue to rise and make debt financing prohibitively expensive, or such financing may not be available 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 and opportunities could be significantly impaired, and our business may be adversely affected.

Risks Related to Third Parties

A real or perceived defect, security vulnerability, error or performance failure in our software or technical problems or disruptions caused by our third-party service providers could cause us to lose revenue, damage our reputation and expose us to liability.

Our hardware products rely upon our complementary software products which are inherently complex and, despite extensive testing and quality control, have in the past and may in the future contain defects, vulnerabilities, or errors, especially when first introduced, or otherwise not perform as contemplated. As the use of our products, including products that were recently acquired or developed, expands to more sensitive, secure or mission critical uses by our customers, we may be subject to increased scrutiny, potential reputational risk or potential liability should our software fail to perform as contemplated in such deployments. We have in the past and may in the future need to issue corrective releases of our software to fix these defects, vulnerabilities, errors or performance failures and we may encounter technical problems when we attempt to perform routine maintenance or enhance our software, internal applications, and systems, which could require us to allocate significant research and development and customer support resources to address these problems and divert the focus of our management and research and development teams. In addition, our platform may be negatively impacted by technical or security issues experienced by our third-party service providers.

Our business, brands, reputation and ability to attract and retain customers depend upon the satisfactory performance, reliability and availability and security of our software products, which in turn, with respect to our planned software as a service (“SaaS”) offerings depend upon the availability and security of the internet and our third-party service providers. For example, for our SaaS offerings we outsource our cloud infrastructure to Amazon Web Services (“AWS”), our hosting provider, which hosts our software products. Our hosting provider runs its own platforms upon which our products depend, and we are, therefore, vulnerable to service interruptions at the hosting provider level. We do not control the operation of any of AWS’ data center hosting facilities, and they may be subject to damage, compromise, or interruption from earthquakes, floods, fires, power loss, telecommunications failures, terrorist attacks and similar events. They may also be subject to damage, compromise, or interruptions due to system failures, cybersecurity incidents, compromises, or vulnerabilities (including system-encrypting ransomware), software errors or subject to data breaches or breaches of computer hardware and software security, break-ins, sabotage, intentional acts of vandalism and similar misconduct. And while we rely on service level agreements with our hosting provider, if they do not properly maintain their infrastructure or if they incur unplanned outages, our customers may experience performance issues or unexpected interruptions and we may not meet our service level agreement terms with our customers. We have experienced in the past and expect to continue to experience interruptions, delays and outages in service and availability from time to time due to a variety of factors, including infrastructure changes, human or software errors, website hosting disruptions and capacity constraints.

Any inefficiencies, security vulnerabilities, errors, defects, technical problems or performance failures with our software, internal applications, systems or infrastructure, or those of our third-party providers, could reduce the quality of our products or interfere with our customers’ (and their users’) use of our products, which could negatively impact our brand and reputation, reduce demand, lead to a loss of customers or revenue, adversely affect our results of operations and financial condition, increase our costs to resolve such issues and subject us to financial penalties and liabilities under our service level agreements. Any limitation of liability provisions that may be contained in our customer agreements may not be effective as a result of existing or future applicable law or unfavorable judicial decisions. The sale and support of our products entail the risk of liability claims, which could be substantial in light of the use of our products in enterprise-wide environments. In addition, our insurance against this liability may not be adequate to cover a potential claim.

We depend on a limited number of third-party contract manufacturers for a substantial portion of all of our manufacturing needs and any delay, disruption or quality control problems in their operations, could cause harm to our operations, including loss of market share and damage to our brand.

We depend on third-party contract manufacturers for the production of our 3D printers and on third-party suppliers for the components and raw materials used in our products. While there are several potential manufacturers for most of these products, all of our products are manufactured, assembled, tested and generally packaged by a limited number of third-party manufacturers and several single source providers of certain supplies. In most cases, we rely on these manufacturers to procure components and, in some cases, subcontract engineering work. Our reliance on a limited number of contract manufacturers involves a number of risks, including:

- unexpected increases in manufacturing and repair costs;
- inability to control the quality and reliability of products;
- inability to control delivery schedules;

- potential liability for expenses incurred by third-party contract manufacturers in reliance on our forecasts that later prove to be inaccurate;
- potential lack of adequate capacity to manufacture all or a part of the products we require;
- potential labor unrest affecting the ability of the third-party manufacturers to produce our products; and
- unexpected component or process obsolescence making key components unavailable.

If any of our third-party contract manufacturers experience a delay, disruption or quality control problems in their operations, including due to global supply chain disruptions, or if a primary third-party contract manufacturer does not renew its agreement with us, our operations could be significantly disrupted and our product shipments could be delayed. Qualifying a new manufacturer and commencing volume production is expensive and time consuming. Ensuring that a contract manufacturer is qualified to manufacture our products to our standards is time consuming. In addition, there is no assurance that a contract manufacturer can scale its production of our products at the volumes and in the quality that we require. If a contract manufacturer is unable to do these things, we may have to move production for the products to a new or existing third-party manufacturer, which would take significant effort and our brand, business, results of operations and financial condition could be materially adversely affected. Finally, if a contract manufacturer producing a highly specified product changes its materials or is unable to meet our production demands, it could lead to specification changes, increased lead time or cancellation of the product.

As we contemplate moving manufacturing into different jurisdictions, we may be subject to additional significant challenges in ensuring that quality, processes, and costs, among other issues, are consistent with our expectations. If such jurisdictions are outside the U.S., we may also face significant challenges regarding compliance with law in such jurisdictions as well as export control laws of such jurisdictions and the U.S., as more fully described in the section “Risk Factors – Risks Related to International Operations” as well as risks associated with quality control, currency exchange rates, foreign laws and customs, timing and loss risks associated with international transportation and potential adverse changes in the political, legal and social environment in the jurisdiction, including the outbreak of war or sustained armed conflict in such jurisdiction or geographic region.

In addition, because we use a limited number of third-party contract manufacturers, increases in the prices charged may have an adverse effect on our results of operations, as we may be unable to find a contract manufacturer who can supply us at a lower price. As a result, the loss of a limited source supplier could adversely affect our relationships with our customers and our results of operations and financial condition.

All of our products must satisfy safety and regulatory standards and some of our products must also receive government certifications. We rely on third-party providers to conduct the tests that support our applications for most regulatory approvals for our products. As part of the certification process, our third-party contract manufacturers are subject to audit and must receive approvals from third-parties providing such certifications. Failure to meet these certifications by our third-party contract manufacturers could adversely impact our business. Moreover, if our third-party contract manufacturers fail to timely and accurately conduct the tests supporting our applications for regulatory approvals, we may be unable to obtain the necessary domestic or foreign regulatory approvals or certifications to sell our products in certain jurisdictions. As a result, we would be unable to sell our products and our sales and profitability could be reduced, our relationships with our sales channel could be harmed and our reputation and brand would suffer.

Our manufacturing facility and those of our third-party contract manufacturers and suppliers, as well as our customers’ facilities and our third-party logistics providers, are vulnerable to disruption due to natural or other disasters, strikes and other events beyond our control.

A major earthquake, fire, tsunami, hurricane, cyclone or other disaster, such as a major flood, seasonal storms, nuclear event, war, sustained armed conflict, such as Russia’s invasion of Ukraine, the armed conflict in Israel, Gaza and the Middle East generally or terrorist attack affecting our facilities or the areas in which they are located, or affecting those of our customers or third-party manufacturers, suppliers or fulfillment centers, could significantly disrupt our or their operations and delay or prevent product shipment or installation during the time required to repair, rebuild or replace our or their damaged manufacturing facilities. These delays could be lengthy and costly. In order to maintain our production timelines and supply chains throughout the world, including with our recently added third party manufacturer in Israel, we may be required to develop alternative infrastructure and we may not be able to avoid interruptions or additional costs. If any of our facilities, or those of our third-party contract manufacturers, suppliers, third-party logistics providers or customers are negatively impacted by such a disaster, production, shipment and installation of our additive manufacturing machines could be delayed, which can impact the period in which we recognize the revenue related to that additive manufacturing machine sale. Additionally, customers may delay purchases of our products until operations return to normal. Even if we are able to respond quickly to a disaster, the continued effects of the disaster could create uncertainty in our business operations. We have no way to predict the progress or outcome of these situations, including any impact on the rest of the world, as the conflicts and government reactions are rapidly developing. In addition, concerns about terrorism, the effects of a terrorist attack, political turmoil, labor strikes, war or the outbreak of epidemic or pandemic diseases could have a negative effect on our operations and sales.

Risks Related to International Operations

Our existing and planned global operations subject us to a variety of risks and uncertainties that could adversely affect our business and operating results. Our business is subject to risks associated with selling machines and other products in non-United States locations.

Our products and services are distributed across the world, and we derive a substantial percentage of our sales from these international markets. Accordingly, we face significant operational risks from doing business internationally.

Our operating results may be affected by volatility in currency exchange rates and our ability to effectively manage our currency transaction risks. Although we currently invoice customers in United States dollars, increases in the value of the dollar relative to foreign currencies may make our products less attractive to foreign customers. We may also incur currency transaction risks if we were to enter into either a purchase or a sale transaction using a different currency from the currency in which we report revenues. In such cases we may suffer an exchange loss because we do not currently engage in currency swaps or other currency hedging strategies to address this risk. As we realize our strategy to expand internationally, our exposure to currency risks may increase. Given the volatility of exchange rates, we can give no assurance that we will be able to effectively manage our currency transaction risks or that any volatility in currency exchange rates will not have an adverse effect on our results of operations.

The shipments of our products to foreign customers and/or end-users may be subject to tariffs and other restrictions imposed by the destination countries. The impact of such tariffs may be especially significant in light of recent trade policy pronouncements by the new administration and reactions from other countries. As we procure equipment and materials from foreign suppliers, we may also be required to pay import duties and comply with regulations imposed by the U.S. Customs and Border Protection. Both the U.S. and foreign tariff rates and import restrictions may change from time to time, which could adversely impact our global operations, for example, by decreasing the price competitiveness of our products in foreign markets and/or by increasing our manufacturing costs.

Other risks and uncertainties we face from our global operations include:

- difficulties in staffing and managing foreign operations;
- limited protection for the enforcement of contract and intellectual property rights in certain countries where we may sell our products or work with suppliers or other third parties;
- potentially longer sales and payment cycles and potentially greater difficulties in collecting accounts receivable;
- costs and difficulties of customizing products for foreign countries;
- challenges in providing solutions across a significant distance, in different languages and among different cultures;
- laws and business practices favoring local competition;
- being subject to a wide variety of complex foreign laws, treaties and regulations and adjusting to any unexpected changes in such laws, treaties and regulations, including local labor laws;
- strict laws and regulations governing privacy and data security, including the European Union’s and the United Kingdom’s General Data Protection Regulation;
- compliance with U.S. laws affecting activities of U.S. companies abroad, including the U.S. Foreign Corrupt Practices Act;
- tariffs, trade barriers and other regulatory or contractual limitations on our ability to sell or develop our products in certain foreign markets;
- operating in countries with a higher incidence of corruption and fraudulent business practices;
- changes in regulatory requirements, including export controls, tariffs and embargoes, other trade restrictions, competition, corporate practices and data privacy concerns;
- failure by our VARs or other distribution partners to comply with local laws or regulations, export controls, tariffs and embargoes or other trade restrictions;
- potential adverse tax consequences arising from global operations;

- seasonal reductions in business activity in certain parts of the world, particularly during the summer months in Europe and at year end globally;
- rapid changes in government, economic and political policies and conditions;
- changes in governmental trade policies, particularly in the U.S., Mexico, Canada and China, difficulty importing and exporting our products across country borders and difficulty complying with customs regulations in the many countries where we sell products; and
- political or civil unrest or instability, terrorism or epidemics and other similar outbreaks or events.

In addition, additive manufacturing has been identified by the U.S. government as an emerging technology, and additional regulatory changes were recently implemented to impose increased and/or new export controls related to additive manufacturing technologies, components and related software. These changes may result in our being required to obtain additional approvals and/or licenses to sell 3D printers in the global market.

Our failure to effectively manage the risks and uncertainties associated with our global operations could limit the future growth of our business and adversely affect our business and operating results.

The effects of regulations relating to foreign trade, manufacturing, development and investment may adversely impact our business.

Changes in U.S. social, political, regulatory and economic conditions or in laws and policies governing foreign trade, manufacturing, development and investment could also adversely affect our business. In extreme cases, we could experience interruptions in production due to the processing of customs formalities or reduced customer spending in the wake of weaker economic performance. If global economic conditions remain volatile for a prolonged period or if European economies experience further disruptions, our results of operations could be adversely affected. In addition, the armed conflicts involving Russia and Ukraine may have direct and indirect effects on global economic conditions and the stability of global financial markets, which could also have a material adverse effect on our business, financial condition and results of operations.

Rising inflation rates could negatively impact our revenues and profitability if increases in the prices of our services or a decrease in consumer spending results in lower sales. In addition, if our costs increase and we are not able to pass along these price increases to our customers, our net profit (loss) would be adversely affected, and the adverse impact may be material.

Inflation rates, particularly in the United States, have increased recently. Increased inflation may result in decreased demand for our products and services, increased operating costs (including our labor costs), reduced liquidity, and limitations on our ability to access credit or otherwise raise debt and equity capital. In addition, the United States Federal Reserve previously raised, and may again in the future raise, interest rates in response to concerns about inflation. Increases in interest rates, especially if coupled with reduced government spending and volatility in financial markets, may have the effect of further increasing economic uncertainty and heightening these risks. In an inflationary environment, we may be unable to raise the sales prices of our products and services at or above the rate at which our costs increase, which could reduce our profit margins and have a material adverse effect on our financial results and net profit (loss). We also may experience lower than expected sales and potential adverse impacts on our competitive position if there is a decrease in consumer spending or a negative reaction to our pricing. A reduction in our revenue would be detrimental to our profitability and financial condition and could also have an adverse impact on our future growth.

The effects of regulations relating to conflict minerals may adversely affect our business.

Pursuant to Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, the SEC adopted requirements for companies that use certain minerals and metals, known as conflict minerals, in their products, whether or not these products are manufactured by third parties. These requirements require companies to research, disclose and report whether or not such minerals originate from the Democratic Republic of Congo and adjoining countries. The implementation of these requirements could adversely affect the sourcing, availability and pricing of such minerals if they are found to be used in the manufacture of our products, including our 3D printers or materials. In addition, we expect to continue to incur additional costs to comply with the disclosure requirements, including costs related to determining the source of any of the relevant minerals and metals used in our products. Since our supply chain is complex, we may not be able to sufficiently verify the origins for these minerals and metals used in our products through the due diligence procedures that we implement, which may harm our reputation. In such event, we may also face difficulties in satisfying customers who require that all of the components of our products are certified as conflict mineral free.

Risks Related to Sales of Products to U.S. and Foreign Governments

A significant portion of our business depends on sales to the public sector, and our failure to receive and maintain government contracts or changes in the contracting or fiscal policies of the public sector could have a material adverse effect on our business.

We derive a significant portion of our revenue from contracts that we have, either directly or through distribution partners and VARs, with federal, state, local and foreign governments and government agencies, and we believe that the success and growth of our business will continue to depend on our successful procurement of government contracts. For example, we have historically derived, and expect to continue to derive, a significant portion of our revenue from sales to agencies of the U.S. federal government and governments of other nations, either directly by us or through other distribution partners. Sales to such governments and their agencies are subject to a number of challenges and risks. The procurement process for governments and their agencies is highly competitive, time-consuming, and may, in certain circumstances, be subject to political influence. We incur significant up-front time and expense, which subjects us to additional compliance risks and costs, without any assurance that we (or a third-party distributor or reseller) will win a contract.

Accordingly, our business, financial condition, results of operations, and prospects may be adversely affected by certain events or activities, including, but not limited to:

- changes in fiscal or contracting policies or decrease in available government funding;
- changes in government programs or applicable requirements;
- changes in the political environment, including before or after a change to the leadership within the government administration, and any resulting uncertainty or changes in policy or priorities and resultant funding;
- appeals, disputes or litigation relating to government procurement, including but not limited to bid protests by unsuccessful bidders on potential or actual awards of contracts to us or our partners by the government;
- the adoption of new laws or regulations or changes to existing laws or regulations;
- budgetary constraints, including automatic reductions as a result of “sequestration” or similar measures and constraints imposed by lapses in appropriations for the federal government or certain of its departments and agencies;
- influence by, or competition from, third parties with respect to pending, new or existing contracts with government customers;
- potential delays or changes in the government appropriations or procurement processes, including as a result of events such as war, incidents of terrorism, natural disasters, and public health concerns or epidemics, such as the COVID-19 pandemic; and
- increased or unexpected costs or unanticipated delays caused by other factors outside of our control, such as performance failures of our partners and subcontractors.

Any such event or activity, among others, could cause governments and governmental agencies to delay or refrain from purchasing our products and services in the future, reduce the size or payment amounts of purchases from existing or new government customers, or otherwise have an adverse effect on our business, results of operations, financial condition and prospects.

Government programs are limited by budgetary constraints and political considerations and are subject to uncertain future funding levels that could result in the termination of programs.

Government agency and department purchases are often strategic in nature and large in size. Therefore, reductions in funding levels that impact our customers could negatively affect the size of our customers’ orders or lead to cancellation of orders. Government contracts are often subject to more extensive scrutiny and publicity than commercial contracts. The number and terms of new government contracts signed can be affected significantly by political and economic factors, such as pending elections and revisions to government tax policies. Negative publicity related to our government contracts, regardless of its accuracy, may damage our business by affecting our ability to compete for new contracts. A decline in security-related government spending for any reason, or a shift away from programs that we address, could hurt our sales, put pressure on our prices and reduce our revenue and margins. Relatedly, the use of our products by militaries or other government agencies or departments in a way that is perceived negatively by the public could adversely affect our business and reputation.

A multi-year U.S. government program may be implemented through the award of many different individual contracts, grants, cooperative agreements and subcontracts or other subawards. For U.S. government programs, program funding is subject to congressional appropriations. Congress generally appropriates funds on a fiscal year basis even though a program may continue for several years. Government programs are often only partially funded initially, and additional funds are committed only as Congress makes further appropriations. The termination of a program or failure to commit funds to a program would result in a loss of anticipated future revenue attributable to that program, which could materially harm our business.

We are subject to audits by the U.S. government which could adversely affect our business.

U.S. government agencies routinely audit and investigate government contractors to monitor performance, cost allocations, cost accounting and compliance with applicable laws, regulations and standards. Since some of our contracts provide for cost reimbursement, the U.S. government has the right to audit our costs even after job completion and after we have billed and recognized the corresponding revenue. The U.S. government also may review the adequacy of, and a contractor's compliance with, its internal control systems and policies, including the contractor's purchasing, property, estimating, compensation and management information systems. Any costs found to be improperly allowed or improperly allocated to a specific contract will not be reimbursed, and any such costs that have already been reimbursed must be refunded, which would affect associated revenue that had already been recognized. While we intend to implement uniform procurement and compliance programs for all of our business, we may be subject to more risks from these audits until we are able to implement such a program effectively.

Responding to governmental audits, inquiries or investigations may involve significant expense and divert the attention of our management. If a government review or investigation uncovers improper or illegal activities, we may be subject to civil and criminal penalties and administrative sanctions, including termination of contracts, forfeiture of profits, suspension of payments, damages, fines and suspension or debarment from doing business with U.S. government agencies. In addition, our reputation could be seriously harmed by allegations of impropriety, even if unfounded. Our internal controls may not prevent or detect all improper or illegal activities.

Our business is subject to laws and regulations that are more restrictive because we are a contractor and subcontractor to the U.S. government.

As a contractor and subcontractor to the U.S. government, we are subject to various laws and regulations that are more restrictive than those applicable to non-government contractors, including the Federal Acquisition Regulations and its supplements, which comprehensively regulate the formation, administration and performance of U.S. government contracts, and the Truth in Negotiations Act and various other laws, which require certain certifications and disclosures. These laws and regulations, among other things:

- require that we obtain and maintain material governmental authorizations and approvals to conduct our business as it is currently conducted;
- require certification and disclosure of cost and pricing data in connection with certain contract negotiations;
- impose rules that define allowable and unallowable costs and otherwise govern our right to reimbursement under certain cost-based U.S. government contracts;
- restrict the use and dissemination of information classified for national security purposes and the export of certain products and technical data; and
- impose requirements relating to ethics and business practices, which carry penalties for noncompliance ranging from monetary fines and damages to loss of the ability to do business with the U.S. government as a prime contractor or subcontractor.

In addition, we may be subject to industrial security regulations of the U.S. Department of Defense and other federal agencies that are designed to safeguard against unauthorized access by foreigners and others to classified and other sensitive U.S. government information. If we were to come under foreign ownership, control or influence, our U.S. government customers could terminate, or decide not to renew, our contracts, or we may be subjected to burdensome industrial security compliance measures. Such a situation could impair our ability to obtain new contracts and subcontracts. The government may also change its procurement practices or adopt new contracting rules and regulations that could be costly to satisfy or that could impair our ability to obtain new contracts.

Our contracts and those of our VARs with governments may impose requirements that may be unfavorable to us and that may have a material adverse effect on our growth prospects and operating results.

Most of our sales to government entities have been made indirectly through our VARs and other distribution partners. In some cases, we have entered contracts directly with government customers. There are inherent risks in contracting with governments and their agencies. Government customers can typically terminate, reduce orders under or otherwise modify any of its contracts with us or our VARs for its convenience (*i.e.*, without cause) whether or not we have failed to perform under the terms of the applicable contract. In such case, the government would not be required to pay our VARs or us for the lost profits for the unperformed work. A termination arising out of our VARs or our default could expose our VARs or us to liability and harm our VARs or our ability to compete for future contracts and orders. In addition to unfavorable termination provisions, our VARs or our U.S. government contracts and related regulations contain provisions that allow the U.S. government to unilaterally suspend our VARs or us from receiving new contracts pending resolution of alleged violations of procurement laws or regulations, reduce the value of existing contracts, issue modifications to a contract and potentially restrict exports of our products, services and associated materials.

Our VARs or our contracts with government agencies may subject our VARs or us to other risks and give the government additional rights and remedies not typically found in commercial contracts, including rights that allow the government to, for example:

- obtain detailed cost or pricing information;
- receive "most favored customer" pricing;
- require us to prioritize orders from our government customers above our other customers' existing orders, which we may fail to do and, even if we do prioritize such orders, may impact our relationships with our other customers;
- perform routine audits;
- impose equal employment and hiring standards;
- require products to be manufactured in specified countries;
- restrict non-U.S. ownership or investment in our company; and/or
- pursue administrative, civil or criminal remedies for contractual violations.

These rights and remedies have the potential to limit our VARs or our sales to, and increase our VARs or our costs of, doing business with both government and commercial customers, which could materially adversely affect our growth prospects and operating results.

Additionally, we sometimes rely on our VARs and other distribution partners to satisfy certain regulatory obligations that we would otherwise have to satisfy if we sold directly to the government entities, and our VARs and other distribution partners may be unable or unwilling to satisfy these obligations in the future. In the event of such termination or change, it may be difficult for us to arrange for another VAR or other distribution partner to sell our solutions to these government entities in a timely manner, and we could lose sales opportunities during the transition.

Risks Related to Litigation and Liability

We could be subject to personal injury, property damage, product liability, warranty and other claims involving allegedly defective products that we supply.

The products we supply are sometimes used in potentially hazardous or critical applications, such as the assembled parts of an aircraft, medical device or automobile. The sale of our products and the provision of related services in general, and to customers in the foregoing industries in particular, exposes us to possible claims for property damage and personal injury or death, which may result from the use of these end-use parts.

While we have not experienced any such claims to date, actual or claimed defects in the products we supply could result in our being named as a defendant in lawsuits asserting potentially large claims. We may be potentially liable, in significant amounts, and face significant harm to our reputation if an aircraft, medical or automotive part, component or accessory or any other aviation, medical or automotive product that we have sold, produced or repaired fails due to our fault, in whole or in part, or if an aircraft or automobile for which we have provided services or in which their parts are installed crashes, and the cause can be linked to those parts or cannot be determined. A similar risk arises in connection with sales of our products to customers in the aerospace industry to the extent that the parts produced by those products do not function properly and are responsible for damages. Our commercial contracts generally contain product warranties and limitations on liability and we carry liability insurance in amounts that we believe are adequate for our risk exposure and commensurate with industry norms. While we intend to monitor our insurance coverage as our business continues to grow, claims may arise in the future, and that insurance coverage may not be adequate or available to protect our consolidated company in all circumstances. Additionally, we might not be able to maintain adequate insurance coverage for our business in the future at an acceptable cost. Any liability claim against us that is not covered by adequate insurance could adversely affect our consolidated results of operations and financial condition. Finally, any liability claim against us may cause harm to our brand, reputation and adversely impact our business.

We could face liability if our additive manufacturing solutions are used by our customers to print dangerous objects.

Customers may use our 3D printers to print parts that could be used in a harmful way or could otherwise be dangerous. For example, there have been news reports that additive manufacturing machines were used to print guns or other weapons. We have little, if any, control over what objects our customers print using our products, and it may be difficult, if not impossible, for us to monitor and prevent customers from printing weapons with our products. Additionally, individuals or entities unaffiliated with us could disseminate plans or digital files that could be used with our products to produce parts and items that could be deemed illegal or harmful. While we have never printed weapons on any printers in our offices, there can be no assurance that we will not be held liable if someone were injured or killed by a weapon printed by a third party using one of our products. Additionally, association of such an incident with our products may cause harm to our brand reputation and adversely impact our business.

Third parties may produce or sell counterfeit or imitation versions of our materials or components.

Third parties may sell counterfeit or imitation versions of our materials or components that are inferior or pose safety risks. If consumers confuse these counterfeit products or materials for our products or materials or have a bad experience with the counterfeit products or materials, they might refrain from purchasing our products or materials in the future, which could harm our reputation and sales. Further, if third parties develop materials that compete favorably on price, and/or meet or exceed the quality and performance of our own materials, we may lose recurring revenue from lost sales of our materials. If we do not maintain favorable perceptions of our products and materials, and if we are unable to compete successfully with third party manufacturers of materials, our brand, business, financial condition, results of operations and cash flows could be adversely impacted.

Failure of our global operations to comply with anti-corruption laws and various trade restrictions, such as sanctions and export controls, could have an adverse effect on our business.

We operate in a number of countries throughout the world, including countries known to have a reputation for corruption. Doing business on a global basis requires us to comply with anti-corruption laws and regulations imposed by governments around the world with jurisdiction over our operations, including the U.S. Foreign Corrupt Practices Act and the U.K. Bribery Act 2010, as well as the laws of the countries where we do business.

We are also subject to various trade restrictions, including trade and economic sanctions and export controls, imposed by governments around the world with jurisdiction over our operations. For example, in accordance with trade sanctions administered by the Office of Foreign Assets Control and the U.S. Department of Commerce, we are prohibited from engaging in transactions involving certain persons and certain designated countries or territories, including Cuba, Iran, Syria, North Korea and the Crimea Region of Ukraine. In light of the conflicts between Russia and Ukraine, we are also prohibited from engaging in transactions involving persons and entities located or headquartered in the so-called Donetsk and Luhansk People’s Republics (DNR and LNR). In addition, our products are subject to export regulations that can involve significant compliance time and may add additional overhead cost to our products. In recent years the United States government has a renewed focus on export matters. For example, the Export Control Reform Act of 2018 and regulatory guidance thereunder have imposed additional controls, and may result in the imposition of further additional controls, on the export of certain “emerging and foundational technologies.” Our current and future products may be subject to these heightened regulations, which could increase our compliance costs. For instance, recent amendments to the U.S. Export Administration Regulations (“EAR”) increased restrictions on exports to certain “military end-users” and for “military end-uses” by certain persons in Belarus, Burma, Cambodia, China, Iraq, Nicaragua, Russia, or Venezuela, which requires us to perform due diligence on customers and end-users in those countries for potential military connections. Recently, proposed changes to the EAR may further expand the restrictions on export transactions involving end users and end uses with military connections in more countries, thereby increasing the burden and cost of pre-sale due diligence.

We also need to monitor the changes in export-related laws and regulations, such as International Traffic in Arms Regulations (“ITAR”), and their applicability to our products and services. If our products or services become subject to the ITAR, we will be required to implement ITAR compliance policies and procedures and we may also be required to obtain licenses, clearances, or authorizations from various regulatory entities. Even in the absence of changes in the ITAR, some of our products, services, or activities may become subject to the ITAR if, for example, we customize them for certain customers in the defense and aerospace industries or if we receive ITAR-controlled information from customers or other parties. If we are not allowed to export our products or services or to engage in certain controlled activities, or if the clearance process is burdensome, our ability to generate revenue would be adversely affected and our operating costs could increase.

In addition, international sales of certain of our products may be subject to local laws and regulations in foreign jurisdictions which we may not be familiar with. We may not be allowed to ship our products to certain countries without meeting their local laws and regulations. The failure to comply with any of these laws or regulations could adversely affect our ability to conduct our business and generate revenues.

We are committed to doing business in accordance with applicable anti-corruption laws and regulations and with applicable trade restrictions. We are subject, however, to the risk that our affiliated entities or our and our affiliates' respective officers, directors, employees and agents (including distributors and VARs of our products) may take action determined to be in violation of such laws and regulations. Any violation by us or by any of these persons could result in substantial fines, sanctions, civil and/or criminal penalties, or curtailment of operations in certain jurisdictions, and might adversely affect our operating results. In addition, actual or alleged violations could damage our reputation and ability to do business.

Although we take precautions to prevent violations of applicable anti-corruption laws and regulations and applicable trade restrictions, we may have exported products in the past in apparent violation of the EAR. If we are found to be in violation of U.S. export control or sanctions laws, it could result in substantial fines and penalties for us and for the individuals working for us. We may also be adversely affected through other penalties, reputational harm, loss of access to certain markets or otherwise.

We are subject to environmental, health and safety laws and regulations related to our operations and the use of our 3D printers and materials, which could subject us to compliance costs and/or potential liability.

We are subject to domestic and foreign environmental, health and safety laws and regulations governing our operations. A certain risk of environmental liability is inherent in our production activities. These laws and regulations govern, among other things, the generation, use, storage, registration, handling, transport and disposal of chemicals and waste materials, the presence of specified substances in electrical products; the emission and discharge of hazardous materials into the ground, air or water; the investigation and cleanup of contaminated sites, including any contamination that results from spills due to our failure to properly dispose of chemicals and other waste materials and the health and safety of our employees. As such, our operations, including our production activities, carry an inherent risk of environmental, health and safety liabilities. Under these laws and regulations, we could be subject to liability for improper disposal of chemicals and waste materials, including those resulting from the use of our systems and accompanying materials by end-users. Accidents or other incidents that occur at our facilities or involve our personnel or operations could result in claims for damages against us. In the event we are found to be financially responsible, as a result of environmental or other laws or by court order, for environmental damages alleged to have been caused by us or occurring on our premises, we could be required to pay substantial monetary damages or undertake expensive remedial obligations. If our operations fail to comply with such laws or regulations, we may be subject to fines and other civil, administrative or criminal sanctions, including the revocation of permits and licenses necessary to continue our business activities, or may be required to make significant expenditures to achieve compliance. In addition, we may be required to pay damages or civil judgments in respect of third-party claims, including those relating to personal injury (including exposure to hazardous substances that we generate, use, store, handle, transport, manufacture or dispose of), property damage or contribution claims. Some environmental laws allow for strict, joint and several liabilities for remediation costs, regardless of fault. We may be identified as a potentially responsible party under such laws. The amount of any costs, including fines or damages payments that we might incur under such circumstances could substantially exceed any insurance we have to cover such losses. Any of these events, alone or in combination, could have a material adverse effect on our business, financial condition and results of operations and could adversely affect our reputation.

We may be subject to environmental laws and regulations including, without limitation, the United States Toxic Substances Control Act ("TSCA") and the Registration, Evaluation, Authorization and Restriction of Chemical Substances ("REACH") concerning the use, import and export of chemicals and hazardous substances, such as chlorinated solvents. Other countries may have more stringent requirements that lead to increased costs, which could have material adverse effect on our business, financial conditions, and results of operations. These laws and regulations require the testing and registration of some chemicals that we ship along with, or that form a part of, our systems and other products. If we fail to comply with these or similar laws and regulations, we may be required to make significant expenditures to reformulate the chemicals that we use in our products and materials or incur costs to register such chemicals to gain and/or regain compliance. We could also be subject to significant fines or other civil and criminal penalties should we not achieve such compliance. Additionally, customer sentiment regarding the use of certain chemicals and hazardous substances could negatively impact our ability to sell certain products.

The cost of complying with current and future environmental, health and safety laws applicable to our operations, or the liabilities arising from releases of, or exposure to, hazardous substances, may result in future expenditures. Any of these developments, alone or in combination, could have an adverse effect on our business, financial condition and results of operations.

Aspects of our business are subject to laws and regulations governing privacy and data security. Changes in laws, regulations, and public perception concerning data protection and privacy, or changes in the interpretation or patterns of enforcement of existing laws and regulations, could impair our efforts to maintain and expand our customer base or the ability of our customers to use our services. Breaches of laws and regulations concerning data protection and privacy could expose us to significant fines and other penalties.

We hold personal information about a variety of individuals, such as our employees, prospects, and our customers. Processing of personal information is increasingly subject to legislation and regulation in numerous jurisdictions around the world.

For example, relevant applicable laws and regulations governing the collection, use, disclosure or other processing of personal information include, in the United States, rules and regulations promulgated under the authority of the Federal Trade Commission, the California Consumer Privacy Act of 2018 (the "CCPA") and similar state privacy laws, and state breach notification laws. In particular, the CCPA, among other things, establishes comprehensive data privacy rights for California consumers and imposes certain requirements on how businesses can collect and use personal information about such individuals. The CCPA provides for civil penalties for violations, as well as a private right of action for certain data breaches that result in the loss of personal information. This private right of action may increase the likelihood of, and risks associated with, data breach litigation.

Similar laws have been passed in numerous other states and other states have proposed similar new privacy laws, and it is possible that certain of these proposals will pass. Such proposed legislation, if enacted, may add additional complexity, variation in requirements, restrictions and potential legal risk, require additional investment of resources in compliance programs, impact strategies and the availability of previously useful data and could result in increased compliance costs and/or changes in business practices and policies. The existence of privacy laws in different states in the country would make our compliance obligations more complex and costly and may increase the likelihood that we may be subject to enforcement actions or otherwise incur liability for noncompliance. Other states have also proposed and/or passed legislation that regulates the privacy and/or security of certain specific types of information. For example, a small number of states have passed laws that regulate biometric data specifically. The costs associated with these various privacy and security laws may impede our development and could limit the adoption of our services. Further, any failure by our vendors to comply with applicable law or regulations could result in proceedings against us by governmental entities or others. State laws are changing rapidly and there is discussion in the U.S. Congress of a new comprehensive federal data privacy law to which we may likely become subject, if enacted.

Moreover, we maintain offices in the European Union ("EU"), specifically, Ireland, and we have customers located in various countries throughout the EU and the United Kingdom ("UK"). Accordingly, in the EU, we are subject to the General Data Protection Regulation (EU) 2016/679 (the "EU GDPR"), and related member state implementing legislation. The EU GDPR governs the collection, use, disclosure, transfer or other processing of personal data of individuals in the EU. Among other things, the EU GDPR imposes strict requirements regarding the security of personal data and notification of data breaches to the competent national data protection authorities, imposes limitations on retention of personal data, imposes stringent requirements relating to the consent of data subjects or ensuring another appropriate legal basis applies to the processing of personal data, requires us to maintain records of our processing activities and to document data protection impact assessments where there is high risk processing, ensuring certain measures are in place with third-party processors. The EU GDPR is also explicitly extraterritorial in its application, and could affect our business activities in jurisdictions outside the EU. The EU GDPR imposes sanctions for violations up to the greater of €20 million and 4% of worldwide gross annual revenue. Further, the EU GDPR enables individuals to claim damages for violations and introduces the right for non-profit organizations to bring claims on behalf of data subjects. Noncompliance could also result in the imposition of orders to stop data processing activities. Compliance with the EU GDPR is a rigorous and time-intensive process and requires us to allocate substantial legal costs to the development of necessary policies and procedures and overall compliance efforts. We expect to incur continued costs associated with maintaining compliance with EU GDPR into the future.

Additionally, the EU GDPR imposes strict rules on the transfer of personal data outside of the EU to countries that do not ensure an adequate level of protection, like the United States. These transfers are prohibited unless a valid transfer mechanism is implemented, such as the Standard Contractual Clauses (SCCs) published by the EU Commission or binding corporate rules. Transfers made pursuant to the SCCs need to be assessed on a case-by-case basis to ensure the law in the recipient country provides "essentially equivalent" protections to safeguard the transferred data. If the standard is not met, businesses will be required to adopt supplementary measures.

Following the withdrawal of the UK from the EU ("Brexit"), the EU GDPR has been incorporated into UK laws ("UK GDPR"). Non-compliance with the UK GDPR may result in monetary penalties of up to £17.5 million or 4% of worldwide revenue, whichever is higher. Despite Brexit, the EU and UK GDPR remain largely aligned. Currently, the most impactful point of divergence relates to transfer mechanisms (i.e., the ability for companies in the EU or the UK to transfer personal information to third countries, including the United States). Like the EU GDPR, the UK GDPR restricts personal data transfers outside the UK to countries not regarded by the UK as providing adequate protection. The UK government has confirmed that personal data transfers from the UK to the EU remain free flowing. The new SCCs do not apply to the UK, but the UK Information Commissioner's Office has published its own transfer mechanism, the International Data Transfer Agreement ("UK IDTA"), which entered into force on 21 March 2022, and enables data transfers originating from the UK. It requires a similar assessment of the data protection provided in the importer's country.

We publicly post documentation regarding our privacy practices as needed to address state, federal and foreign privacy laws. Although we endeavor to comply with our published policies and documentation, we may at times fail to do so or be alleged to have failed to do so. Any failure or perceived failure by us to comply with our privacy policies could expose us to costly litigation, significant awards, fines or judgments, civil and/or criminal penalties or negative publicity, and could materially and adversely affect our business, financial condition and results of operations. The publication of our privacy policy and other documentation that provide promises and assurances about privacy and security can subject us to potential state and federal action if they are found to be deceptive, unfair, or misrepresentative of our actual practices, which could, individually or in the aggregate, materially and adversely affect our business, financial condition and results of operations.

The regulatory framework governing the collection, processing, storage, use and sharing of personal information is rapidly evolving and is likely to continue to be subject to uncertainty and varying interpretations at both the domestic and international level. It is possible that these laws, rules and regulations may be interpreted and applied in a manner that is inconsistent with our practices or the features of our services and platform capabilities, and may not be consistent with one another. The lack of a unified approach to data privacy and protection laws in the U.S. and internationally could lead to complicated and potentially conflicting compliance requirements. Complying with these evolving compliance and operational requirements may impose significant costs, such as costs related to organizational changes, implementing additional protection technologies, modifying our data processing practices and policies, training employees and engaging consultants and legal advisors, which are likely to increase over time and may require that we utilize management's time and/ or divert resources from other initiatives and projects. We cannot yet fully determine the impact these or future laws, rules, regulations and industry standards may have on our business or operations. Additionally, our customers may be subject to differing privacy laws, rules and legislation, which may mean that they require us to be bound by varying contractual requirements applicable to certain other jurisdictions. Adherence to such contractual requirements may impact our collection, use, processing, storage, sharing and disclosure of personal information and may mean we become bound by, or voluntarily comply with, self-regulatory or other industry standards relating to these matters that may further change as laws, rules and regulations evolve.

We have incurred, and may continue to incur, significant expenses to comply with evolving mandatory privacy and security standards and protocols imposed by law, regulation, industry standards, shifting merchant and customer expectations, or contractual obligations, and we may not be able to respond quickly or effectively to regulatory, legislative and other developments. These changes may in turn impair our ability to offer our existing or planned features, products and services and/or increase our cost of doing business. Any failure or perceived failure by us to comply with any applicable federal, state or foreign laws and regulations relating to data privacy and security could result in damage to our reputation, as well as proceedings or litigation by governmental agencies or other third parties, including class action privacy litigation in certain jurisdictions, which would subject us to significant fines, sanctions, awards, injunctions, penalties or judgments. Any of the foregoing could have a material adverse effect on our business, financial condition, results of operations and prospects.

The use of new and evolving technologies, such as artificial intelligence, in our offerings may result in spending material resources and presents risks and challenges that can impact our business including by posing security and other risks to our confidential information, proprietary information and personal information, and as a result we may be exposed to reputational harm and liability.

We continue to build and integrate artificial intelligence into our offerings, and this innovation presents risks and challenges that could affect its adoption, and therefore our business. If we enable or offer solutions that draw controversy due to perceived or actual negative societal impact, we may experience brand or reputational harm, competitive harm or legal liability. The use of certain artificial intelligence technology can give rise to intellectual property risks, including compromises to proprietary intellectual property and intellectual property infringement. Additionally, we expect to see increasing government and supranational regulation related to artificial intelligence use and ethics, which may also significantly increase the burden and cost of research, development and compliance in this area. For example, the EU's Artificial Intelligence Act ("AI Act") — the world's first comprehensive AI law — entered into force in August 2024 and, with some exceptions, will begin to apply as of August 2, 2026. This legislation imposes significant obligations on providers and deployers of high risk artificial intelligence systems, and encourages providers and deployers of artificial intelligence systems to account for EU ethical principles in their development and use of these systems. If we develop or use AI systems that are governed by the AI Act, it may necessitate ensuring higher standards of data quality, transparency, and human oversight, as well as adhering to specific and potentially burdensome and costly ethical, accountability, and administrative requirements. Likewise, in the U.S., several states, including Colorado and California, passed laws that will take effect in 2026, to regulate various uses of AI, including to make consequential decisions. If we develop or use AI systems governed by these laws or regulations, we will need to meet higher standards of data quality, transparency, monitoring and human oversight, and we would need to adhere to specific and potentially burdensome and costly ethical, accountability, and administrative requirements, with the potential for significant enforcement or litigation in the event of any perceived non-compliance. The rapid evolution of artificial intelligence will require the application of significant resources to design, develop, test and maintain our products and services to help ensure that artificial intelligence is implemented in accordance with applicable law and regulation and in a socially responsible manner and to minimize any real or perceived unintended harmful impacts. Our vendors may in turn incorporate artificial intelligence tools into their own offerings, and the providers of these artificial intelligence tools may not meet existing or rapidly evolving regulatory or industry standards, including with respect to privacy and data security. Further, bad actors around the world use increasingly sophisticated methods, including the use of artificial intelligence, to engage in illegal activities involving the theft and misuse of personal information, confidential information and intellectual property. Any of these effects could damage our reputation, result in the loss of valuable property and information, cause us to breach applicable laws and regulations, and adversely impact our business.

We rely on our software and information technology systems to manage numerous aspects of our business and a disruption of these systems could adversely affect our business.

We rely on our information technology systems to manage numerous aspects of our business, including to efficiently purchase products from our suppliers, provide procurement and logistic services, ship products to our customers, receive orders from our customers, manage our accounting and financial functions, including our internal controls, and maintain our research and development data. Our information technology systems are an essential component of our business and any disruption or compromise could significantly limit our ability to manage and operate our business efficiently. A failure of our information technology systems to perform properly could disrupt our supply chain, product development and customer experience, which may lead to increased overhead costs and decreased sales and have an adverse effect on our reputation and our financial condition. In particular, our integrated software platform is an essential system that virtually all of our customers depend on for their design needs. If our integrated software platform were to fail, we could face adverse consequences to our results of operations, financial condition and business reputation.

We and the third parties upon which we rely face a variety of evolving threats, which could cause cybersecurity incidents or data breaches, such as cyberattacks, malicious internet-based activity, online and offline fraud, and other similar activities, as well as data breaches. Such threats are prevalent and continue to rise, are increasingly difficult to detect, and come from a variety of sources. Like other companies in our industry, we, and our third party vendors, have experienced and will continue to experience threats and cybersecurity incidents related to our data and information technology systems and infrastructure.. For example, in October 2024,, as a result of a successful phishing email, a company employee's email account was compromised by a bad actor who attempted to misdirect a recent settlement payment. No funds were dispersed to the bad actor, however. Although we take steps and incur significant costs to secure our information technology systems, including our computer systems, intranet and internet sites, email and other telecommunications and data networks, our security measures may not be effective and our systems may be vulnerable to damage, compromise, or interruption. Disruption to or compromise of our information technology systems could result from power outages, computer and telecommunications failures, computer viruses, cyber-attack or other security compromises or breaches (including ransomware), as well as data breaches catastrophic events such as fires, floods, earthquakes, tornadoes, hurricanes, acts of war, terrorism and usage errors by our employees, wrongful conduct by employees, vendors, or other third parties, hostile foreign governments, industrial espionage, wire fraud and other forms of cyber fraud or cyber-attacks. Attacks on information technology systems are increasing in their frequency, levels of persistence, sophistication and intensity, and they are being conducted by increasingly sophisticated and organized groups and individuals with a wide range of motives and expertise. Such attacks could include the deployment of harmful malware, ransomware, denial-of-service attacks, social engineering (including phishing attacks), business email compromises, wrongful intrusions and other means to affect service reliability and threaten or compromise the security, confidentiality, integrity, and availability of systems and information.

Our reputation and financial condition could be adversely affected if, as a result of a significant cyber-event or otherwise:

- our operations are disrupted or shut down;
- our confidential and/or proprietary information or other sensitive information, including customer or employee information, is stolen, disclosed, misappropriated, or otherwise compromised;
- we incur costs or are required to pay fines in connection with a security compromise, including stolen, disclosed, misappropriated, or otherwise compromised confidential information and/or proprietary information or other sensitive information, including customer or employee information; or
- we must dedicate significant resources to system repairs, security incident investigation or remediation, or increase cyber security protection.

In addition, any unauthorized access, disclosure or other loss, compromise, or unauthorized use of information or data could result in legal notifications and disclosures, legal claims or proceedings, regulatory investigations or actions, and other types of liability under laws that protect the privacy and security of protected information, including personal information, including federal, state and foreign data protection and privacy regulations, violations of which could result in significant penalties and fines. In addition, although we seek to prevent and detect all data security incidents, security compromises or breaches and other malicious cyber activities can be difficult to detect and any delay in identifying or remediating them may lead to increased harm and legal exposure.

The cost of investigating, mitigating and responding to potential cybersecurity incidents or data breaches and complying with applicable legal obligations, including breach notification obligations to individuals, regulators, partners and others can be significant. Our contracts may not contain limitations of liability, and even where they do, there can be no assurance that limitations of liability in our contracts are sufficient to protect us from liabilities, damages, or claims related to our privacy and data security obligations. Further, although we maintain cyber liability insurance, this insurance may not provide adequate coverage against potential liabilities related to any experienced cybersecurity incident or breach. In addition, such insurance may not be available to us in the future on economically reasonable terms, or at all. Further, defending a suit or regulatory inquiry or investigation, regardless of its merit, could be costly, divert management attention and harm our reputation.

If our computer or technology systems are damaged or cease to function properly, or, if we do not replace or upgrade certain systems, we may incur substantial costs to repair or replace them and may experience an interruption of our normal business activities, security compromise, or loss of critical data. Any such disruption or compromise could adversely affect our reputation and financial condition.

We also rely on information technology systems maintained by third parties, including third-party cloud computing services and the computer systems of our suppliers for both our internal operations and our customer-facing infrastructure related to our additive manufacturing solutions. These systems are also vulnerable to the types of interruption, compromise, and damage described above, but we have less ability to take measures to protect against such disruptions or compromises or to resolve them if they were to occur. Information technology problems or security compromises faced by third parties on which we rely could adversely impact our business and financial condition as well as negatively impact our brand reputation.

Any unauthorized control or manipulation of our products' systems could result in loss of confidence in us and our products and harm our business.

Our products contain complex information technology systems and software. For example, our additive manufacturing machines are designed with built-in data connectivity to accept and install periodic remote updates from us to monitor, improve and update their functionality. We have designed, implemented and tested security measures intended to prevent and detect unauthorized access to our information technology networks, our products and their systems. However, hackers may attempt to gain unauthorized access to modify, alter and use such networks, products and systems to gain control of, or to change, our products' functionality, user interface and performance characteristics, or to gain access to data stored in or generated by our products. We encourage reporting of potential vulnerabilities in the security of our products and we aim to remedy any reported and verified vulnerability. We have received reports of potential vulnerabilities, threats, and security incidents related to our data and information technology systems in the past and have taken steps to remediate them. There can be no assurance that vulnerabilities will not be exploited in the future before they can be identified, or that our remediation efforts are or will be successful.

Any unauthorized access to or control of our products or their systems or any loss of data could result in legal claims or proceedings. In addition, regardless of their veracity, reports of unauthorized access to our products, their systems or data, as well as other factors that may result in the perception that our products, their systems or data are capable of being "hacked," could negatively affect our brand and harm our business, prospects, financial condition and operating results.

Our business has risks that may not be adequately covered by insurance or indemnity.

We may face unanticipated risks of legal liability for damages caused by the actual or alleged failure of our products. While we have attempted to secure liability insurance coverage at an appropriate cost, it is impossible to adequately insure against all risks inherent in our industry, nor can we assure you that our insurers will pay a particular claim, or that we will be able to maintain coverage at reasonable rates in the future. Our insurance policies also contain deductibles, limitations and exclusions, which increase our costs in the event of a claim. Even a partially uninsured claim of significant size, if successful, could have an adverse effect on our financial condition. In addition, we may not be able to continue to obtain insurance coverage on commercially reasonable terms, or at all, and our existing policies may be cancelled or otherwise terminated by the insurer. Maintaining adequate insurance and successfully accessing insurance coverage that may be due for a claim can require a significant amount of our management's time, and we may be forced to spend a substantial amount of money in that process. Substantial claims in excess of or not otherwise covered by indemnity or insurance could harm our financial condition and operating results.

Risks Related to Intellectual Property

We may not be able to adequately protect our proprietary and intellectual property rights in our data or technology.

Our success is dependent, in part, upon protecting our proprietary information and technology. Our intellectual property portfolio primarily consists of patents, patent applications, registered and unregistered trademarks, unregistered copyrights, domain names, know-how, and trade secrets. We may be unsuccessful in adequately protecting our intellectual property.

Our trade secrets, know-how and other unregistered proprietary rights are a key aspect of our intellectual property portfolio. While we take reasonable steps to protect our trade secrets and confidential information and enter into confidentiality and invention assignment agreements intended to protect such rights, such agreements can be difficult and costly to enforce or may not provide adequate remedies if violated, and we may not have entered into such agreements with all relevant parties. Such agreements may be breached and trade secrets or confidential information may be willfully or unintentionally disclosed, including by employees who may leave our company and join our competitors, or our competitors or other parties may learn of the information in some other way. Additionally, certain unauthorized use of our intellectual property may go undetected, or we may face legal or practical barriers to enforcing our legal rights even where unauthorized use is detected. The disclosure to, or independent development by, a competitor of any of our trade secrets, know-how or other technology not protected by a patent or other intellectual property system could materially reduce or eliminate any competitive advantage that we may have over such competitor. This concern could manifest itself in particular with respect to our proprietary materials that are used with our systems. Portions of our proprietary materials may not be afforded patent protection. Our pending patent applications may not be granted, and we may not be able to obtain foreign patents or pending applications corresponding to our U.S. 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 products similar to ours. Our competitors may also be able to develop similar technology independently or design around our patents and other intellectual property. Any of the foregoing events would lead to increased competition and reduce our revenue or gross margin, which would adversely affect our operating results.

Current laws may not provide for adequate protection of our products, especially in foreign jurisdictions which may have laws that provide insufficient protections to companies. In addition, legal standards relating to the validity, enforceability, and scope of protection of proprietary rights in internet-related businesses are uncertain and evolving, and changes in these standards may adversely impact the viability or value of our proprietary rights. Some license provisions protecting against unauthorized use, copying, transfer, and disclosure of our products, or certain aspects of our products may be unenforceable under the laws of certain jurisdictions. Further, the laws of some countries do not protect proprietary rights to the same extent as the laws of the United States, and the laws and mechanisms for protection and enforcement of intellectual property rights in some foreign countries may be inadequate. As we continue to operate in foreign countries and expand our international activities, we have encountered and may in the future encounter challenges in navigating the laws of foreign countries, which may adversely affect our ability to protect our proprietary rights. Further, competitors, foreign governments, foreign government-backed actors, criminals, or other third parties may gain unauthorized access to our proprietary information and technology. Accordingly, despite our efforts, we may be unable to prevent third parties from infringing upon or misappropriating our technology and intellectual property or claiming that we infringe upon or misappropriate their technology and intellectual property.

To protect our intellectual property rights, we may be required to spend significant resources to monitor, protect, and defend these rights, and we may or may not be able to detect infringement by our customers or third parties. Litigation has been and may be necessary in the future to enforce our intellectual property rights and to protect our trade secrets. Such litigation, regardless of merit, could be costly, time consuming, and distracting to management and key technical personnel, and could result in the impairment or loss of portions of our intellectual property. In particular, in July 2021, Continuous Composites brought a claim in the United States District Court for the District of Delaware against us regarding patent infringement which we recently settled pursuant to the Settlement Agreement. For more information on the Continuous Composites litigation, please reference the Risk Factor section entitled *"Risks Related to Our Business and Industry – We have been in the recent past, subject to business and intellectual property litigation."*

Furthermore, our efforts to enforce our intellectual property rights may be met with defenses, counterclaims, and countersuits attacking the validity and enforceability of our intellectual property rights. Our inability to protect our proprietary technology against unauthorized copying or use, as well as any costly litigation or diversion of our management's attention and resources, could delay further sales or the implementation of our platform, impair the functionality of our platform, delay introductions of new features, integrations, and capabilities, result in our substituting inferior or more costly technologies into our platform, or injure our reputation. In addition, we may be required to license or pay royalties on additional technology from third parties to develop and market new features, integrations, and capabilities, and we cannot be certain that we could license that technology on commercially reasonable terms or at all, and our inability to license this technology could harm our ability to compete.

As part of any settlement or other compromise to avoid complex, protracted litigation, we have and may again in the future agree not to pursue future claims against a third party, including related to alleged infringement of our intellectual property rights. Part of any settlement or other compromise, including the Settlement Agreement, with another party may resolve a potentially costly dispute but may also have future repercussions on our ability to defend and protect our intellectual property rights, which in turn could adversely affect our business.

If third parties claim that we infringe upon or otherwise violate their intellectual property rights, our business could be adversely affected.

We have in the recent past and may in the future be subject to claims that we have infringed or otherwise violated third parties' intellectual property rights. There is patent, copyright and other intellectual property development and enforcement activity in our industry and relating to the additive manufacturing technology we use in our business. Our future success depends in part on not infringing upon or otherwise violating the intellectual property rights of others. Our competitors or other third parties (including non-practicing entities and patent holding companies) have and may from time to time continue to claim that we are infringing upon or otherwise violating their intellectual property rights and we may be found to be infringing upon or otherwise violating such rights. As discussed elsewhere in this Annual Report on Form 10-K, we recently settled a patent infringement lawsuit brought against us by Continuous Composites. For more information on the Continuous Composites litigation, please reference the Risk Factor section entitled *"Risks Related to Our Business and Industry – We have been in the recent past, subject to business and intellectual property litigation."* Further, we may be unaware of the intellectual property rights of others that may cover some or all of our current or future technology or conflict with our rights, and the patent, copyright, and other intellectual property rights of others may limit our ability to improve our technology and compete effectively. Any claims of intellectual property infringement or other intellectual property violations, even those without merit, could:

- be expensive and time consuming to defend;
- cause us to cease making, licensing or using our platform or products that incorporate the challenged intellectual property;
- require us to modify, redesign, reengineer or rebrand our platform or products, if feasible;
- divert management's attention and resources; or
- require us to enter into royalty or licensing agreements to obtain the right to use a third-party's intellectual property.

Any royalty or licensing agreements, if required, may not be available to us on acceptable terms or at all. A successful claim of infringement against us could result in our being required to pay significant damages, enter into costly settlement agreements, or prevent us from offering our platform or products, any of which could have a negative impact on our operating profits and harm our future prospects. We may also be obligated to indemnify our customers or business partners in connection with any such litigation and to obtain licenses, modify our platform or products, or refund premium subscription fees, which could further exhaust our resources. Such disputes could also disrupt our platform or products, adversely affecting our customer satisfaction and ability to attract customers.

Our additive manufacturing technology contains third-party open-source software components, and failure to comply with the terms of the underlying open-source software licenses could restrict our ability to commercialize our products.

Our additive manufacturing technology contains components that are licensed under so-called "open source," "free" or other similar licenses. Open source software is made available to the general public on an "as-is" basis under the terms of a non-negotiable license. We currently combine our proprietary software with open source software and intend to continue doing so in the future. Additionally, we make some of our source code available under open source licenses, which may limit our ability to protect our intellectual property rights in our source code and prevent our competitors or others from using such source code. Our use and distribution of open source software may entail greater risks than use of third-party commercial software because open source licensors generally do not provide warranties or other contractual protections regarding infringement claims or the quality of the code. In addition, if we combine our proprietary software with open source software in a certain manner, we could, under certain open source licenses, be required to disclose or make available the source code of our proprietary software to third parties. We may also face claims alleging noncompliance with open source license terms or infringement or misappropriation of third-party intellectual property rights in open source software. These claims could result in litigation, require us to purchase a costly license or remove the software. In addition, if the license terms for open source software that we use change, we may be forced to re-engineer our solutions, incur additional costs or discontinue the sale of our offerings if re-engineering could not be accomplished on a timely basis. Although we monitor our use of open source software to avoid subjecting our offerings to unintended conditions, there is a risk that these licenses could be construed in a way that could impose unanticipated conditions or restrictions on our ability to commercialize our offerings. We cannot guarantee that we have incorporated open source software in our software in a manner that will not subject us to liability or in a manner that is consistent with our current policies and procedures.

General Risk Factors

If we are unable for any reason to meet the continued listing requirements of the New York Stock Exchange ("NYSE"), such action or inaction could result in a delisting of our Common Stock.

On November 17, 2023, we were notified by the NYSE that we were not in compliance with Section 802.01C of the NYSE Listed Company Manual because the average closing price of our Common Stock was less than $1.00 per share over a consecutive 30 trading-day period. The notice had no immediate impact on the listing of our Common Stock .We submitted a reverse stock split proposal to our stockholders at our 2024 annual meeting to increase the trading price of our Common Stock and regain compliance. The reverse stock split proposal was approved by the stockholders at the 2024 annual meeting and, following approval by our board of directors, we implemented a 10-for-1 reverse stock split of our Common Stock on September 19, 2024. On October 30, 2024, we were notified by the NYSE that we had regained compliance with the NYSE's minimum bid price listing requirement pursuant to Section 802.01C of the NYSE Listed Company Manual with respect to our Common Stock.

The reverse stock split and the subsequent public announcement of our entry into the Nano Merger Agreement on September 25, 2024 resulted in increases to the per share trading price of our Common Stock. There can be no assurance that the stock price increases resulting from the reverse stock split and public announcement of our entry into the Nano Merger Agreement will be maintained. For example, if the Nano Merger Agreement were to be terminated and the Nano Merger was not consummated, the per share price of our Common Stock may decrease, which may result in us falling out of compliance with the NYSE's minimum bid price listing requirements in the future. Further, the liquidity of the shares of our Common Stock may be affected adversely by the reverse stock split given the reduced number of shares of our Common Stock that are outstanding following the reverse stock split. Furthermore, the market price of our split-adjusted Common Stock may not attract new investors and may not satisfy the investing requirements of those investors.

In addition, on September 26, 2024, the NYSE notified us it had determined to commence proceedings to delist our Public Warrants due to "abnormally low" trading price levels pursuant to Section 802.01D of the NYSE Listed Company Manual. We did not appeal the NYSE's determination and our Public Warrants were delisted on January 6, 2025.

The delisting of our Common Stock could make it more difficult for us to raise capital on favorable terms in the future. Such a delisting would likely have a negative effect on the price of our securities and would impair your ability to sell or purchase our securities when you wish to do so. In the event of a delisting, actions taken by us to restore compliance with listing requirements may not allow our securities to become listed again, stabilize the market price or improve the liquidity of our securities, prevent such securities from dropping below any minimum bid price requirement or prevent future non-compliance with the NYSE listing requirements.

Changes in accounting rules and regulations, or interpretations thereof, could result in unfavorable accounting charges or require us to change our compensation policies.

Accounting methods and policies for public companies are subject to review, interpretation and guidance from our independent registered accounting firm and relevant accounting authorities, including the SEC. Changes to accounting methods or policies, or interpretations thereof, may require us to reclassify, restate or otherwise change or revise our consolidated financial statements.

Our disclosure controls and procedures may not prevent or detect all errors or acts of fraud.

We designed our disclosure controls and procedures to reasonably assure that information we must disclose in reports we file or submit under the Exchange Act is accumulated and communicated to management, and recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC. We believe that any disclosure controls and procedures or internal controls and procedures, no matter how well-conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by an unauthorized override of the controls.

Our management team has limited experience managing a public company.

Our management team has limited experience managing a publicly traded company, interacting with public company investors, and complying with the increasingly complex laws, rules and regulations that govern public companies. As a public company, we are subject to significant obligations relating to reporting, procedures and internal controls, and our management team may not successfully or efficiently manage such obligations. These obligations and scrutiny require significant attention from our management and could divert their attention away from the day-to-day management of our business, which could adversely affect our business, financial condition and results of operations.

Our internal controls over financial reporting currently do not meet all of the standards contemplated by Section 404 of the Sarbanes Oxley Act, and failure to achieve and maintain effective internal controls over financial reporting in accordance with Section 404 of the Sarbanes Oxley Act could impair our ability to produce timely and accurate financial statements or comply with applicable regulations and have a material adverse effect on our business.

We operated as a private company until July 2021. Our management has significant requirements for enhanced financial reporting and internal controls as a public company. The process of designing and implementing effective internal controls is a continuous effort that requires us to anticipate and react to changes in our business and the economic and regulatory environments and to expend significant resources to maintain a system of internal controls that is adequate to satisfy our reporting obligations as a public company. If we are unable to establish or maintain appropriate internal financial reporting controls and procedures, it could cause us to fail to meet our reporting obligations on a timely basis or result in material misstatements in our consolidated financial statements, which could harm our operating results. In addition, we are required, pursuant to Section 404 of the Sarbanes Oxley Act of 2002 (the “Sarbanes Oxley Act”), to furnish a report by management on, among other things, the effectiveness of our internal control over financial reporting. This assessment needs to include disclosure of any material weaknesses identified by our management in our internal control over financial reporting.

The rules governing the standards that must be met for our management to assess our internal control over financial reporting are complex and require significant documentation, testing, and possible remediation. Testing and maintaining internal controls may divert management’s attention from other matters that are important to our business. Our independent registered public accounting firm will be required to attest to the effectiveness of our internal control over financial reporting on an annual basis. However, while we remain an emerging growth company, we will not be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. If we are not able to complete our initial assessment of our internal controls and otherwise implement the requirements of Section 404 of the Sarbanes Oxley Act in a timely manner or with adequate compliance, our independent registered public accounting firm may not be able to certify as to the adequacy of our internal control over financial reporting.

In addition to our results determined in accordance with GAAP, we believe certain non-GAAP measures may be useful in evaluating our operating performance. We present certain non-GAAP financial measures in this Annual Report on Form 10-K and intend to continue to present certain non-GAAP financial measures in future filings with the SEC and other public statements. Any failure to accurately report and present our non-GAAP financial measures could cause investors to lose confidence in our reported financial and other information, which would likely have a negative effect on the trading price of our Common Stock.

We have identified material weaknesses in our internal control over financial reporting and may identify additional material weaknesses in the future or fail to maintain effective internal control over financial reporting, which may result in material misstatements of our consolidated financial statements or cause us to fail to meet our periodic reporting obligations.

We have identified material weaknesses in our internal control over financial reporting. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis. These material weaknesses are as follows:

- We did not design and maintain an effective control environment commensurate with our financial reporting requirements. Specifically, we lacked a sufficient complement of resources with (i) an appropriate level of accounting knowledge, experience and training to appropriately analyze, record and disclose accounting matters timely and accurately, and (ii) an appropriate level of knowledge and experience to establish effective processes and controls. Additionally, the lack of a sufficient number of professionals resulted in an inability to consistently establish appropriate authorities and responsibilities in pursuit of our financial reporting objectives, as demonstrated by, among other things, insufficient segregation of duties in our finance and accounting functions. This material weakness contributed to the following additional material weaknesses:
- We did not design and maintain effective controls related to the period-end financial reporting process, including designing and maintaining formal accounting policies, procedures and controls to achieve complete, accurate and timely financial accounting, reporting and disclosures. Additionally, we did not design and maintain controls over the preparation and review of account reconciliations and journal entries, including maintaining appropriate segregation of duties.
- We did not design and maintain effective controls related to the identification of and accounting for certain non-routine, unusual or complex transactions, including the proper application of U.S. GAAP of such transactions. Specifically, we did not design and maintain controls to timely identify and account for share repurchase transactions, warrant instruments, and performance based stock awards.

These material weaknesses resulted in audit adjustments to the following financial statement line items in the historical Markforged financial statements: operating expense, other expense, interest expense, other assets, other liabilities, additional paid in capital, treasury stock, retained earnings, note receivable—equity, and series D preferred stock. These adjustments were recorded prior to the issuance of the consolidated financial statements as of and for the years ended December 31, 2020 and 2019. Additionally, these material weaknesses resulted in audit adjustments to additional paid in capital and stock-based compensation expense for the quarters ended June 30, 2021, September 30, 2021, December 31, 2021, June 30, 2022, and December 31, 2022. The material weakness related to accounting for warrant instruments resulted in the restatement of the previously issued financial statements of AONE, the entity we merged with as part of the Merger related to warrant liabilities and equity. Additionally, these material weaknesses could result in a misstatement of substantially all of our accounts or disclosures that would result in a material misstatement to the annual or interim consolidated financial statements that would not be prevented or detected.

•We did not design and maintain effective controls over information technology (“IT”) general controls for information systems that are relevant to the preparation of our financial statements. Specifically, we did not design and maintain (i) program change management controls for financial systems to ensure that information technology program and data changes affecting financial IT applications and underlying accounting records are identified, tested, authorized and implemented appropriately; (ii) user access controls to ensure appropriate segregation of duties and that adequately restrict user and privileged access to financial applications, programs, and data to appropriate Company personnel; (iii) computer operations controls to ensure that critical batch jobs are monitored, privileges are appropriately granted, and data backups are authorized and monitored; and (iv) testing and approval controls for program development to ensure that new software development is aligned with business and IT requirements. These IT deficiencies did not result in any misstatements to the financial statements, however, the deficiencies, when aggregated, could impact our ability to maintain effective segregation of duties, as well as the effectiveness of IT-dependent controls (such as automated controls that address the risk of material misstatement to one or more assertions, along with the IT controls and underlying data that support the effectiveness of system-generated data and reports) that could result in misstatements potentially impacting all financial statement accounts and disclosures that would result in a material misstatement to the annual or interim financial statements that would not be prevented or detected. Accordingly, management has determined these deficiencies in the aggregate constitute a material weakness.

We are in the process of designing and implementing controls and taking other actions to remediate the material weaknesses described above, including the following:

•We have hired, and continue to hire, additional accounting and IT personnel to bolster our reporting, technical accounting and IT capabilities. Additionally, we designed and implemented controls to formalize roles and review responsibilities to align with our team’s skills and experience and we are designing and implementing controls over segregation of duties.

•We have designed and implemented controls related to the period-end financial reporting process, including formal accounting policies, procedures and controls to achieve complete, accurate and timely financial accounting, reporting and disclosures. Additionally, we have designed and implemented controls over the preparation and review of account reconciliations and journal entries.

•We have designed and implemented controls to timely identify and account for non-routine, unusual or complex transactions and other technical accounting and financial reporting matters, including controls over the preparation and review of accounting memoranda addressing these matters.

•We have designed and implemented IT general controls, including controls over program change management, the review and update of user access rights and privileges, controls over batch jobs and data backups, and program development approvals and testing.

We have engaged third-party specialists to assist with testing and validating the operating effectiveness of certain controls over financial reporting to gain assurance that such controls are present and operating as designed, as well as to help review and update existing documentation of our internal controls for compliance with the Sarbanes-Oxley Act of 2002.

We are working to remediate the material weaknesses as efficiently and effectively as possible and expect full remediation could potentially go beyond December 31, 2025. At this time, we cannot provide an estimate of costs expected to be incurred in connection with implementing this remediation plan; however, these remediation measures will be time consuming, will result in us incurring significant costs, and will place significant demands on our financial and operational resources.

Our ability to use net operating loss (“NOL”) carryforwards and other tax attributes may be limited.

We have incurred substantial losses during our history and our ability to become profitable in the near future is uncertain. To the extent that we continue to generate taxable losses, unused losses will carry forward to offset future taxable income, if any, until such unused losses expire (if at all). As of December 31, 2024, we had federal NOL carryforwards of approximately $251.3 million, of which $15.0 million are subject to expire at various times beginning in 2033, and $236.2 million that have no expiration date and will be carried forward indefinitely. We also had state NOL carryforwards of approximately $128.7 million that will begin to expire in 2026, unless previously utilized. On December 31, 2024, we had federal and state research and development credit carryforwards of approximately $8.5 million and $5.3 million, respectively. The research and development credit carryforwards will begin expiring in 2033, unless previously utilized.

Federal NOLs incurred in tax years beginning after December 31, 2017 and before January 1, 2021 may be carried back to each of the five tax years preceding such loss, and NOLs arising in tax years beginning after December 31, 2020 may not be carried back. Because we have had no taxable income in prior years, we do not anticipate carrying back any of our net operating losses. Moreover, federal NOLs generated in taxable years ending after December 31, 2017, may be carried forward indefinitely, but the deductibility of such federal NOLs may be limited to 80% of our taxable income annually for tax years beginning after December 31, 2020. Our NOL carryforwards are subject to review and possible adjustment by the IRS, and state tax authorities. In addition, in general, under Sections 382 and 383 of the Code, a corporation that undergoes an "ownership change" is subject to limitations on its ability to utilize its pre-change NOLs or tax credits to offset future taxable income or taxes. For these purposes, an ownership change generally occurs where the aggregate stock ownership of one or more stockholders or groups of stockholders who own at least 5% of a corporation's stock increases their ownership by more than 50 percentage points over their lowest ownership percentage within a specified testing period. Our existing NOLs or credits may be subject to limitations arising from previous ownership changes, and future changes in our stock ownership, many of which are outside of our control, could result in an ownership change under Sections 382 and 383 of the Code. Our NOLs or credits may also be impaired under state law. Accordingly, we may not be able to utilize a material portion of our NOLs or credits. If we determine that an ownership change has occurred and our ability to use our historical NOLs or credits is materially limited, it will harm our future operating results by effectively increasing our future tax obligations. Section 382 and 383 of the Code would apply to all net operating loss and tax credit carryforwards, whether the carryforward period is indefinite or not. If we earn taxable income, such limitations could result in increased future tax liability to us and our future cash flows could be adversely affected. We have recorded a full valuation allowance related to our NOLs and other deferred tax assets due to the uncertainty of the ultimate realization of the future benefits of those assets.

Comprehensive tax reform legislation could adversely affect our business and financial condition.

The rules dealing with U.S. federal, state and local income taxation are constantly under review by persons involved in the legislative process and by the Internal Revenue Service, or IRS, and the U.S. Treasury Department. Changes to tax laws (which changes may have retroactive application) could adversely affect us or holders of our Common Stock. In recent years, many changes have been made and changes are likely to continue to occur in the future.

Additional changes to U.S. federal income tax law are currently being contemplated. Future changes in tax laws could have a material adverse effect on our business, cash flow, financial condition or results of operations. It cannot be predicted whether, when, in what form, or with what effective dates, new tax laws may be enacted, or regulations and rulings may be enacted, promulgated or issued under existing or new tax laws, which could result in an increase in our or our stockholders' tax liability or require changes in the manner in which we operate in order to minimize or mitigate any adverse effects of changes in tax law or in the interpretation thereof.

A change in the tax laws, treaties or regulations, or their interpretation, of any country in which we operate could increase our tax, obligations and compliance costs, which could have an adverse effect on our business, financial condition and results of operations. There are currently multiple initiatives for comprehensive tax reform underway in key jurisdictions in which we operate, and we cannot predict whether any specific legislation will be enacted in these jurisdictions or the terms of any such legislation. Furthermore, we cannot predict whether the new administration will pursue changes to U.S. tax laws, regulations, treaties and policies. Any such changes could have an adverse effect on our business, financial condition and results of operations.

Additional Risks Related to Ownership of Our Common Stock and Us Operating as a Public Company

We will continue to incur increased costs as a result of operating as a public company, and our management are required to devote substantial time to new compliance initiatives.

As a public company, we incur significant legal, accounting and other expenses that we did not incur as a private company. In addition, the Sarbanes Oxley Act of 2002 and rules subsequently implemented by the Securities and Exchange Commission and the NYSE have imposed various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel need to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations increase our legal and financial compliance costs and make some activities more time-consuming and costly. For example, we expect that these rules and regulations may make it more difficult and more expensive for us to obtain director and officer liability insurance.

Pursuant to the Sarbanes Oxley Act, we are required to furnish a report by our management on our internal control over financial reporting, including an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. However, while we remain an emerging growth company, we are not required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. To achieve compliance with Section 404 of the Sarbanes Oxley Act within the prescribed period, we are engaged in a process to document and evaluate our internal control over financial reporting, which is both costly and challenging. In this regard, we need to continue to dedicate internal resources, potentially engage outside consultants and adopt a detailed work plan to assess and document the adequacy of internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are functioning as documented and implement a continuous reporting and improvement process for internal control over financial reporting. Despite our efforts, there is a risk that neither we nor our independent registered public accounting firm will be able to conclude within the prescribed timeframe that our internal control over financial reporting is effective as required by Section 404 of the Sarbanes Oxley Act. This could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our financial statements. In addition, if we are not able to continue to meet these requirements, we may not be able to remain listed on NYSE.

The price of our Common Stock has been, and may continue to, be volatile.

The price of our Common Stock may fluctuate due to a variety of factors, including:

•expectations regarding consummation of the Nano Merger;

•the outcome of litigation relating to the Nano Merger;

•the potential delisting of our Common Stock if we fall out of compliance with the NYSE's minimum bid price listing requirements again in the future;

•changes in the industries in which we and our customers operate;

•developments involving our competitors;

•changes in laws and regulations affecting our business;

•variations in our operating performance and the performance of our competitors in general;

•actual or anticipated fluctuations in our quarterly or annual operating results;

•publication of research reports by securities analysts about us or our competitors or our industry;

•the public's reaction to our press releases, other public announcements and filings with the SEC;

•actions by stockholders;

•additions and departures of key personnel;

•commencement of, involvement in, or settlement of, litigation involving the Company;

•changes in our capital structure, such as future issuances of securities (including such issuances associated with the reverse stock split) or the incurrence of additional debt;

•the volume of shares of our Common Stock available for public sale; and

•general economic and political conditions, including but not limited to global supply chain disruptions, recessions, interest rates, inflation, local and national elections, fuel prices, international currency fluctuations, corruption, political instability and acts of war or terrorism.

These market and industry factors may materially impact the market price of our Common Stock regardless of our operating performance. Stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many technology companies. Stock prices of many technology companies have fluctuated in a manner unrelated or disproportionate to the operating performance of those companies. If the stock prices for technology companies or the broader stock market continue to experience a loss of investor confidence, the trading price of our Common Stock could decline for reasons unrelated to our business, financial condition or results of operations.

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

We currently intend to retain our future earnings, if any, to finance the further development and expansion of our business and do not intend to pay cash dividends in the foreseeable future. Any future determination to pay dividends will be at the discretion of our board of directors and will depend on our financial condition, results of operations, capital requirements, restrictions contained in future agreements and financing instruments, business prospects and such other factors as its board of directors deems relevant. In addition, our ability to pay cash dividends is restricted during the pendency of the Nano Merger pursuant to the terms of the Nano Merger Agreement.

If analysts do not continue to publish research about our business or if they publish inaccurate or unfavorable research, our stock price and trading volume could decline.

The trading market for our Common Stock depends in part on the research and reports that analysts publish about our business. We do not have any control over these analysts. We currently have limited research coverage by securities and industry analysts. If other securities or industry analysts do not commence coverage of our company, the trading price for our stock could be negatively impacted. If one or more of the analysts who cover us downgrade our Common Stock or publish inaccurate or unfavorable research about our business, the price of our Common Stock would likely decline. If few analysts cover us, demand for our Common Stock could decrease and our Common Stock price and trading volume may decline. Similar results may occur if one or more of these analysts stop covering us in the future or fail to publish reports on us regularly.

We may be subject to securities litigation, which is expensive and could divert management attention.

The market price of our Common Stock may be volatile and, in the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We may be the target of this type of litigation in the future, including in connection with the Nano Merger. Securities litigation against us could result in substantial costs and divert management's attention from other business concerns, which could seriously harm our business.

Future issuances and/or resales of our Common Stock may increase the volatility of and/or cause the market price of our securities to drop significantly, even if our business is doing well.

1,466,666 shares of our Common Stock may be issued (the "Markforged Earnout Shares") upon our achievement of certain Earnout Triggering Events (as described in the Merger Agreement and Note 11 to our consolidated financial statements), and additional shares may be issued upon exercise of the outstanding warrants to purchase shares of our Common Stock. Consummation of the proposed Nano Merger would constitute an Earnout Triggering Event. To the extent such additional shares of our Common Stock are issued, it will result in dilution to the holders of our Common Stock and an increase to the number of shares eligible for resale in the public market. Sales, or the potential for sales, of substantial numbers of such shares in the public market could increase the volatility of and/or adversely affect the market price of our Common Stock.

The obligations associated with being a public company involve significant expenses and require significant resources and management attention, which may divert from our business operations.

As a public company, we are subject to the reporting requirements of the Exchange Act and the Sarbanes-Oxley Act. The Exchange Act requires the filing of annual, quarterly and current reports with respect to a public company's business and financial condition. The Sarbanes-Oxley Act requires, among other things, that a public company establish and maintain effective internal control over financial reporting. As a result, we incur significant legal, accounting and other expenses that we did not previously incur. Our entire management team and many of our other employees will need to devote substantial time to compliance.

These rules and regulations result in us incurring substantial legal and financial compliance costs and make some activities more time-consuming and costly. For example, these rules and regulations will likely continue to make it more difficult and more expensive for us to obtain director and officer liability insurance, and it may be required to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. As a result, it may be difficult for us to attract and retain qualified people to serve on our board of directors, our board committees or as executive officers.

We are currently an emerging growth company within the meaning of the Securities Act, and to the extent we have taken advantage of certain exemptions from disclosure requirements available to emerging growth companies or smaller reporting companies, this could make our securities less attractive to investors and may make it more difficult to compare our performance with other public companies.

We are currently an "emerging growth company" within the meaning of the Securities Act, as modified by the JOBS Act, and we may take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and shareholder approval of any golden parachute payments not previously approved. As a result, our shareholders may not have access to certain information they may deem important. We cannot predict whether investors will find our securities less attractive because we will rely on these exemptions. If some investors find our securities less attractive as a result of our reliance on these exemptions, the trading prices of our securities may be lower than they otherwise would be, there may be a less active trading market for our securities and the trading prices of our securities may be more volatile.

Further, Section 102(b)(1) of the JOBS Act exempts emerging growth companies from being required to comply with new or revised financial accounting standards until private companies (that is, those that have not had a Securities Act registration statement declared effective or do not have a class of securities registered under the Exchange Act) are required to comply with the new or revised financial accounting standards. The JOBS Act provides that a company can elect to opt out of the extended transition period and comply with the requirements that apply to non-emerging growth companies but any such election to opt out is irrevocable. We have elected not to opt out of such extended transition period, which means that when a standard is issued or revised and it has different application dates for public or private companies, we, as an emerging growth company, can adopt the new or revised standard at the time private companies adopt the new or revised standard. This may make comparison of our financial statements with another public company, which is neither an emerging growth company nor an emerging growth company which has opted out of using the extended transition period, difficult or impossible because of the potential differences in accounting standards used.

When we cease to be an emerging growth company, we will no longer be able to take advantage of certain exemptions from reporting, and, absent other exemptions or relief available from the SEC, we will also be required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act. We will incur additional expenses in connection with such compliance and our management will need to devote additional time and effort to implement and comply with such requirements.

Delaware law and our certificate of incorporation and bylaws contain certain provisions, including anti-takeover provisions that limit the ability of stockholders to take certain actions and could delay or discourage takeover attempts that stockholders may consider favorable.

The DGCL and our certificate of incorporation and bylaws contain provisions that could have the effect of rendering more difficult, delaying, or preventing an acquisition that stockholders may consider favorable, including transactions in which stockholders might otherwise receive a premium for their shares. These provisions could also limit the price that investors might be willing to pay in the future for shares of our Common Stock, and therefore depress the trading price of our Common Stock. These provisions could also make it difficult for stockholders to take certain actions, including electing directors who are not nominated by the current members of our board of directors or taking other corporate actions, including effecting changes in our management. Among other things, our certificate of incorporation and bylaws include provisions regarding:

- the ability of our board of directors to issue shares of preferred stock, including “blank check” preferred stock and to determine the price and other terms of those shares, including preferences and voting rights, without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquirer;
- the board of directors are classified into three classes, with only one class being elected each year to serve three-year terms. As a result, in most circumstances, a person can gain control of our board only by successfully engaging in a proxy contest at two or more annual stockholders meetings;
- the certificate of incorporation will prohibit cumulative voting in the election of directors, which limits the ability of minority stockholders to elect director candidates;
- the limitation of the liability of, and the indemnification of, our directors and officers;
- the ability of our board of directors to amend the bylaws, which may allow our board of directors to take additional actions to prevent an unsolicited takeover and inhibit the ability of an acquirer to amend the bylaws to facilitate an unsolicited takeover attempt; and
- advance notice procedures with which stockholders must comply to nominate candidates to our board of directors or to propose matters to be acted upon at a stockholders’ meeting, which could preclude stockholders from bringing matters before annual or special meetings of stockholders and delay changes in our board of directors and also may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer’s own slate of directors or otherwise attempting to obtain control of us.

These provisions, alone or together, could delay or prevent hostile takeovers and changes in control or changes in our board of directors or management.

The provisions of our bylaws requiring exclusive forum in the Court of Chancery of the State of Delaware and the federal district courts of the United States for certain types of lawsuits may have the effect of discouraging certain lawsuits, including derivative lawsuits and lawsuits against the directors and officers of us, by limiting plaintiffs’ ability to bring a claim in a judicial forum that they find favorable.

Our bylaws provide that, to the fullest extent permitted by law, and unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware (or, in the event that such court does not have jurisdiction, the federal district court for the District of Delaware or other state courts of the State of Delaware) will be the sole and exclusive forum for any state law claims for (i) any derivative action or proceeding brought on behalf of us, (ii) any action asserting a claim for or based on a breach of a fiduciary duty owed by any current or former director, officer or other employee of us to us or our stockholders, (iii) any action asserting a claim arising pursuant to any provision of the DGCL or the Bylaws or Certificate of Incorporation (as either may be amended from time to time) (including the interpretation, validity and enforceability thereof), (iv) any action asserting a claim related to or involving us that is governed by the internal affairs doctrine, and (v) any action asserting an "internal corporate claim" as that term is defined in Section 115 of the DGCL (the "Delaware Forum Provision"). The Delaware Forum Provision, however, does not apply to actions or claims arising under the Exchange Act. The Bylaws also provide that, unless we consent in writing to the selection of an alternate forum, the sole and exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act, and the rules and regulations promulgated thereunder, will be the Federal District Courts of the United States (the "Federal Forum Provision," and with the Delaware Forum Provision, the "Exclusive Forum Provisions"). In addition, the Bylaws provide that any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock is deemed to have notice of and consented to the Delaware Forum Provision and the Federal Forum Provision, provided, however, that stockholders cannot and will not be deemed to have waived compliance with the U.S. federal securities laws and the rules and regulations thereunder.

These provisions may impose additional litigation costs on stockholders in pursuing any such claims and have the effect of discouraging certain lawsuits, including derivative lawsuits and lawsuits against our directors and officers, by limiting plaintiffs' ability to bring a claim in a judicial forum that they find favorable. In addition, while the Delaware Supreme Court and other state courts have upheld the validity of federal forum selection provisions purporting to require claims under the Securities Act be brought in federal court, there is uncertainty as to whether other courts will enforce our Federal Forum Provision. The Federal Forum Provision may also impose additional litigation costs on stockholders who assert that the provision is not enforceable or invalid, and if the Federal Forum Provision is found to be unenforceable, we may incur additional costs associated with resolving such matters. The Court of Chancery of the State of Delaware and the Federal District Courts of the United States may also reach different judgments or results than would other courts, including courts where a stockholder considering an action may be located or would otherwise choose to bring the action, and such judgments may be more or less favorable to us than our stockholders.

The private placement warrants issued to the Sponsor, and the Markforged Earnout Shares, are accounted for as liabilities recorded at fair value upon issuance with changes in fair value each period reported in earnings, which may have an adverse effect on the market price of our Common Stock.

Under U.S. GAAP, we are required to evaluate our warrants to determine whether they should be accounted for as a warrant liability or as equity. We have concluded that the warrants contain provisions requiring liability classification. Therefore, we are accounting for the warrants as a warrant liability and recorded that liability at fair value upon issuance. We will record any subsequent changes in fair value as of the end of each period for which earnings are reported. The impact of changes in fair value on earnings may have an adverse effect on the market price of our Common Stock and may cause fluctuations in our results of operations based on factors that are outside of our control.

Additionally, the Markforged Earnout Shares are also accounted for as a liability because the triggering events that determine the number of shares to be earned included events that were not indexed to our Common Stock. These liabilities are subject to re-measurement at each balance sheet date. With each such re-measurement, the earnout liability will be adjusted to fair value, with a resulting non-cash gain or loss related to the change in the fair value being recognized in our earnings in the statement of operations. The impact of changes in fair value on earnings may have an adverse effect on the market price of our Common Stock. Due to the recurring fair value measurement, we expect that we will recognize non-cash gains or losses for each future reporting period and that the amount of such gains or losses could be material.

Item 1B. Unresolved Staff Comments.

Not applicable.

Item 1C. Cybersecurity

Governance Related to Cybersecurity Risks

Our board of directors holds overall oversight responsibility for the Company's strategy and risk management processes, including in relation to cybersecurity risks. Our board exercises its oversight function through the audit committee, which oversees the assessment and management of risk exposure across various areas, including cybersecurity. Our audit committee receives regular reports from our Chief Financial Officer on significant cybersecurity matters, including, where appropriate, whether any significant incidents have occurred.

Our IT Security Steering Committee, which is led by our Chief Financial Officer, is composed of various members of our organization, including our VP of Software Engineering and Director of Information Systems and Security. The IT Security Steering Committee is involved in oversight of cybersecurity risk. The IT Steering Committee exercises this function through our IT Security Team, which includes our Director of Information Systems and Security and our VP of Software Engineering who collectively have over 40 years of experience. The IT Security Team is responsible for the administration of our cyber program and works with various vendors and external providers to test and monitor for vulnerabilities and threats. We also engage our employees in our cybersecurity efforts through a process for employees to complete annual security and awareness training.

Cybersecurity Risk Management and Strategy

Our cybersecurity program is informed by industry standards and includes processes for identification, assessment, and management of cybersecurity risks. With support from external vendors, we conduct internal and external risk assessments to assess our cyber program and develop strategies for the management of cyber risks. We also employ vendors and external partners to monitor for and manage threats, and we engage in testing to identify vulnerabilities and use third-party tools to scan for potential risks.

Our IT Security Team is informed about and monitors the prevention, management, and remediation of cybersecurity risks through various means, including by leveraging a managed security service provider and other third-party security software and technology services. Our managed security service provider is also tasked with testing, auditing, and monitoring the performance of our cybersecurity processes. We also maintain processes for reviewing and assessing vendor security before new engagements as part of our Vendor Advisory Board's function, which includes the administration of questionnaires and interviews.

We maintain processes to inform and update management and, as needed, the audit committee, about security incidents that may pose a significant risk for the business, as applicable. In accordance with our incident response policies, our IT Security Team and Chief Financial Officer are responsible for establishing incident response teams to manage cybersecurity incidents, should any arise. Although risks from cybersecurity threats have to date not materially affected us, and we do not believe they are reasonably likely to materially affect us, our business strategy, results of operations or financial condition, we have, from time to time, experienced threats and security incidents relating to our and our third party vendors' information systems. For more information, please see "Item 1A, Risk Factors."

Item 2. Properties.

Our corporate headquarters is located in an approximately 120,681 square foot facility located at 60 Tower Road, Waltham, Massachusetts 02451.The lease of this facility began on April 1, 2022 and expires on September 30, 2031. We lease a 47,000 square foot facility at 4 Suburban Park Drive, Billerica, Massachusetts 10821. The Billerica facility lease expires October 2029. We also lease additional smaller facilities in Sweden and Poland. We believe that our facilities are adequate for our current needs and, should the company need additional space, we believe we will be able to obtain additional space on commercially reasonable terms.

Item 3. Legal Proceedings.

From time to time we are and have been involved in claims that arise during the ordinary course of business. Although the results of litigation and claims cannot be predicted with certainty, we do not currently believe that the outcome of any of these legal matters has had or will have a material effect on our results of operation or financial condition, other than as discussed below regarding the settlement of the matter involving Continuous Composites Inc. ("Continuous Composites") and the potential outcome of the matter involving Desktop Metal, which we previously disclosed. Additionally, we may in the future be the target of securities class action and derivative lawsuits as a result of our entry into the Nano Merger Agreement. Regardless of the outcome, litigation can be costly and time consuming, as it can divert management's attention from important business matters and initiatives, negatively impacting our overall operations.

In July 2021, Continuous Composites Inc. ("Continuous Composites"), a company based in Idaho, brought a claim in the United States District Court for the District of Delaware against the Company regarding patent infringement. On April 11, 2024, the jury returned a verdict against the Company in the amount of $17.3 million. Following post-trial motions relating to the jury verdict, on September 20, 2024, the Company entered into a Settlement and Patent License Agreement with Continuous Composites. The Settlement Agreement resolved all claims and counterclaims in the patent infringement litigation brought by Continuous Composites against the Company in the lawsuit. Under the terms of the Settlement Agreement, the Company made an initial upfront payment of $18 million to Continuous Composites, which payment was made on October 10, 2024, and is required to make three additional installment payments thereafter of $1 million, $2 million and $4 million in the fourth quarters of fiscal years 2025, 2026 and 2027, respectively. In consideration of such payments, the Settlement Agreement provides for a dismissal of all claims with prejudice, cross-licenses of the parties' respective patent portfolios, a mutual release of claims for liabilities arising prior to the effective date of the Settlement Agreement and mutual covenants not to sue. To secure payment under the Settlement Agreement, the Company granted Continuous Composites a security interest in, among other assets, the Company's patent intellectual property rights pursuant to the Security Agreement. On October 11, 2024, the parties filed a Stipulation of Dismissal with the United States District Court for the District of Delaware, which was granted, and the case was terminated.

The incremental amount due under the Settlement Agreement compared to the original verdict is determined to be representative of the amount attributable to the licensing of the patent rights contemplated under the Settlement Agreement and is recognized as an intangible asset of $5.5 million, after discount using a rate of 12%, to be amortized to cost of revenue over the life of the patents of 23 years. The future payments under the Settlement Agreement are secured by the Security Agreement and as such the Company has recorded a long-term settlement payable on the consolidated balance sheet of $5.2 million which will accrete $1.8 million of interest over the payment term recognized as interest expense.

In addition, on December 31, 2024, Desktop Metal filed a complaint captioned *Desktop Metal, Inc. v. Nano Dimension Ltd., et al., C.A. No. 2025-0002-KSJM*, in the Delaware Court of Chancery (the "Court") in which we and Nano were named as defendants. The Complaint generally alleged that Nano breached the terms of its merger agreement with Desktop Metal by subsequently entering into the Nano Merger Agreement with us, and that closing the Nano Merger prior to the pending merger between Desktop Metal and Nano would jeopardize the parties' ability to close the Desktop Metal Merger. Desktop Metal requested, among other forms of relief, an order from the Court enjoining consummation of the Nano Merger until the Desktop Metal Merger has closed. On January 22, 2025, Desktop Metal filed a notice of voluntary dismissal with the Court to dismiss us as a defendant in the Desktop Metal Action, without prejudice. Subsequently, on January 31, 2025 and February 4, 2025, respectively, the Court granted Desktop Metal leave to file an amended complaint and consolidated the action with a prior action related to the Desktop Metal Merger, which Desktop Metal had previously filed against Nano in the Delaware Court of Chancery on December 16, 2024. The consolidated action is captioned *Desktop Metal, Inc. v. Nano Dimension Ltd. et al., C.A. No. 2024-1303-KSJM*. While we are no longer a defendant in the Consolidated Desktop Metal Action, the lawsuit between Nano and Desktop Metal remains active and Desktop Metal continues to claim that Nano breached its obligations to Desktop Metal by pursuing the Nano Merger.

Trial took place in the Consolidated Desktop Metal Action on March 11 and 12, 2025. On March 24, 2025, the Court issued a post-trial decision holding that Nano breached its obligations under the Desktop Metal Merger agreement to take all actions necessary to obtain regulatory approval from CFIUS and use reasonable best efforts to close the Desktop Metal Merger, and that Nano failed to prove its counterclaims against Desktop Metal. Nano was ordered to enter into a National Security Agreement with CFIUS and to close the Desktop Metal Merger. The Court also issued a letter decision on March 26, 2025 regarding Desktop Metal's claims pertaining to Nano's conduct in purusing the Nano Merger Agreement, which directed the parties to update the Court regarding the relevance of the Nano Merger in light of Court's March 24 Decision. Desktop Metal and Nano submitted a joint letter to the Court, dated March 26, 2025, addressing among other things the relevance of the Nano Merger to the parties' disputes, pursuant to the Court's March 26 letter decision. In the letter, Desktop Metal stated that, in light of the Court's order directing Nano to close the Desktop Metal Merger and Nano's continued written confirmation that it will provide Desktop Metal with five days notice before closing the Nano Merger, it does not at this time seek an injunction concerning the Nano Merger.

While we are no longer a defendant in the Consolidated Desktop Metal Action, the outcome of this action could have a negative impact on the Nano Merger, including the Nano Merger being delayed and/or enjoined by a court of competent jurisdiction, which could prevent the Nano Merger from becoming effective. We may also be subject to future litigation in connection with the Nano Merger, which could also have a negative impact on our ability to consummate the Nano Merger in a timely manner or at all.

Item 4. Mine Safety Disclosures.

Not Applicable.

PART II

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

Market Information

Our Common Stock is listed on the New York Stock Exchange under the symbol "MKFG."

Stockholders

As of March 27, 2025, there were 85 holders of record of our Common Stock and 1 holder of record of our warrants. The actual number of stockholders of our Common Stock and the actual number of holders of our warrants is greater than the number of record holders and includes stockholders of our warrants whose Common Stock or warrants are held in street name by brokers and other nominees.

Dividend Policy

We have never declared or paid cash dividends on our capital stock. We do not expect to pay dividends on our capital stock for the foreseeable future, instead anticipating that all of our earnings for the foreseeable future will be used for the operation and growth of our business. The payment of any future dividends will be at the discretion of our board of directors and will depend on various factors, including our operating results, financial condition, capital requirements, growth plans, any contractual and legal restrictions on our payment of dividends, and any other factors deemed relevant by our board of directors.

Securities Authorized for Issuance under Equity Compensation Plans

The information required by this item is incorporated by reference herein to our definitive Proxy Statement for our 2025 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the fiscal year ended December 31, 2024.

Recent Sales of Unregistered Securities

All sales of unregistered securities by us during the year ended December 31, 2024 have been included previously in an Annual Report on Form 10-K or in a Current Report on Form 8-K.

Issuer Purchases of Equity Securities

None.

Item 6. [Reserved]

Not applicable.

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

Unless otherwise indicated or the context otherwise requires, references in this section to "Markforged," "Company," "we," "us," "our" and other similar terms refer to Markforged Holding Corporation and its subsidiaries after giving effect to the Merger. The following discussion and analysis summarizes the significant factors affecting the consolidated operating results, financial condition, liquidity and cash flows of our company as of and for the periods presented below. The following discussion and analysis should be read in conjunction with our consolidated financial statements and the related notes thereto included elsewhere in this Annual Report on Form 10-K. The discussion contains forward-looking statements that are based on the beliefs of management, as well as assumptions made by, and information currently available to, our management. Actual results could differ materially from those discussed in or implied by forward-looking statements as a result of various factors, including those discussed below and elsewhere in this Annual Report on Form 10-K, particularly in the sections entitled "Risk Factors" and "Cautionary Note Regarding Forward-Looking Statements."

Business Overview

Our platform, The Digital Forge, is an intuitive additive manufacturing platform powering engineers, designers and manufacturing professionals globally. The Digital Forge combines precise and reliable 3D printers and metal and composite proprietary materials seamlessly with its cloud-based learning software offering to empower manufacturers to create more resilient and agile supply chains. Founded in 2013 by two MIT-educated engineers, Markforged is based in greater Boston, Massachusetts, where we have our own in-house manufacturing facility and where we design all of our industrial 3D printers, software and metal and composite proprietary materials.

Since our inception, we have incurred significant operating losses. Our ability to generate revenue sufficient to achieve profitability will depend on the successful further development and commercialization of our products. We generated revenue of $85.1 million and $93.8 million for the years ended December 31, 2024 and 2023, respectively, and incurred net losses of $85.6 million and $103.6 million, respectively, for those same periods. Net loss for the years ended December 31, 2024 was inclusive of an $18.0 million accrual related to the Continuous Composites case. As of December 31, 2024 we had an accumulated deficit of $290.2 million and cash, cash equivalents, and short term investments of $53.6 million. We expect to continue to incur operating losses as we focus on growing commercial sales of our products in both the United States and international markets, scaling our manufacturing operations, continuing research and development efforts to develop new products and further enhance our existing products.

Merger agreement

On February 23, 2021, One, a Cayman Islands exempted company ("AONE"), entered into an Agreement and Plan of Merger (the "Merger Agreement") with Caspian Merger Sub Inc., a wholly owned subsidiary of AONE ("Merger Sub"), and MarkForged, Inc. ("Legacy Markforged"), pursuant to which (i) AONE would deregister as a Cayman Islands company and domesticate as a corporation in the State of Delaware and would be renamed "Markforged Holding Corporation" (the "Domestication") and (ii) Merger Sub would merge with and into Legacy Markforged with Legacy Markforged surviving as a wholly owned subsidiary of Markforged Holding Corporation (the "Merger"). AONE's shareholders approved the transactions contemplated by the Merger Agreement on July 13, 2021, and the Domestication and the Merger were completed on July 14, 2021.

Cash proceeds of the Merger were funded through a combination of AONE's $132.5 million of cash held in trust (after redemptions of $64.2 million) and an aggregate of $210.0 million in fully committed common stock transactions at $10.00 per share. Upon closing of the Merger (the "Closing"), Legacy Markforged repurchased shares of common stock from certain of its stockholders, for a total value of $45.0 million of cash on hand (the "Employee Transactions"). Total net proceeds upon the Closing, net of the Employee Transactions and transaction costs paid at the Closing of $27.1 million, were $288.8 million.

Reverse Stock Split

On September 19, 2024, the Company effected a 10-for-1 reverse stock split of the Company's Common Stock. All shares of the Company's Common Stock, stock-based instruments and per-share data included in this Annual Report on Form 10-K have been retroactively adjusted as though the stock split had been effected prior to all periods presented.

Settlement Agreement and Security Agreement

On September 20, 2024, we entered into the Settlement Agreement with Continuous Composites to settle outstanding litigation claims and counterclaims, which are further described in Part I, Item 3 – *Legal Proceedings* of this Annual Report on Form 10-K. We paid the first settlement payment of $18 million required under the Settlement Agreement on October 10, 2024, and are required to make three additional installment payments thereafter of $1 million, $2 million and $4 million in the fourth quarters of fiscal years

2025, 2026 and 2027, respectively. These settlement payments are secured by a security interest granted to Continuous Composites in, among other assets, our patent intellectual property rights pursuant to a Security Agreement entered into with Continuous Composites on September 20, 2024 (the "Security Agreement"). Our inability to make any future settlement payments may result in the forfeiture of our patent intellectual property rights to Continuous Composites under the terms of the Security Agreement.

In consideration of the settlement payments, the Settlement Agreement provides for a dismissal of all claims with prejudice, cross-licenses of the parties' respective patent portfolios, a mutual release of claims for liabilities arising prior to the effective date of the Settlement Agreement and mutual covenants not to sue. On October 11, 2024, the parties filed a Stipulation of Dismissal with the United States District Court for the District of Delaware, which was granted, and the case was terminated.

As of December 31, 2024 we have paid $18.0 million in connection with the Continuous Composites litigation.

Copies of the Settlement Agreement and Security Agreement are filed as Exhibits 10.13 and 10.14, respectively, to this Annual Report on Form 10-K.

Proposed Merger with Nano Dimension Ltd.

On September 25, 2024, we entered into the Nano Merger Agreement with Nano and Nano Merger Sub, pursuant to which Nano Merger Sub will merge with and into us, and we will survive the Nano Merger as an indirect wholly-owned subsidiary of Nano. Following the closing of the Nano Merger, our Common Stock will be delisted from the NYSE and will be deregistered under the Exchange Act.

Subject to the terms and conditions set forth in the Nano Merger Agreement, at the Effective Time, each outstanding share of our Common Stock, other than Excluded Shares, will be converted automatically into the right to receive an amount in cash equal to $5.00 per share, without interest, less any applicable tax withholdings. Immediately prior to the Effective Time, each Excluded Share will be cancelled and cease to exist and no consideration will be paid or payable in respect thereof.

We have incurred substantial transaction costs associated with the pending Nano Merger, including fees for legal, financial accounting, and other advisory services, as well as other related expenses. For the year ended December 31, 2024, these costs totaled approximately $4.9 million, reflecting a significant financial commitment. We anticipate that additional transaction costs related to the Nano Merger will continue to be incurred in fiscal year 2025.

For further information about the Nano Merger, refer to the Nano Merger Agreement, a copy of which is filed as Exhibit 2.2 to this Annual Report on Form 10-K, and our definitive Proxy Statement filed on Schedule 14A with the SEC on November 13, 2024.

Delisting of Public Warrants

On September 26, 2024, the NYSE notified the Company that the NYSE had determined to delist our Public Warrants due to "abnormally low" trading price levels pursuant to Section 802.01D of the NYSE Listed Company Manual. We did not appeal the NYSE's determination and our Public Warrants were delisted on January 6, 2025.

Regaining Compliance with the NYSE's Minimum Bid Price Listing Requirement

On October 30, 2024, the NYSE notified the Company that it had regained compliance with the NYSE's minimum bid price listing requirement pursuant to Section 802.01C of the NYSE Listed Company Manual with respect to its Common Stock because the average closing price of the Common Stock exceeded $1.00 per share over a consecutive 30 trading-day period. The Company had previously been notified by the NYSE that it had fallen out of compliance with the NYSE's minimum bid price listing requirement on April 18, 2023 November 17, 2023.

Impact of Macroeconomic Trends

Recent negative macroeconomic factors, such as inflation, high interest rates and limited credit availability have and could further cause economic uncertainty and volatility, which could harm our business, result in price pressure or budget constraints. For more information on operations and risks related to macroeconomic disruptions, please see the section of this Annual Report on Form 10-K titled "Risk Factors — Risks Related to Our Business and Industry".

Key Factors Affecting Operating Results

We believe that our financial performance has been and in the foreseeable future will continue to be primarily driven by the factors discussed below. While each of these factors presents significant opportunities for our business, they also pose important challenges that we must successfully address in order to sustain our growth and improve our results of operations.

Hardware sales

Our financial performance has largely been driven by, and in the future will continue to be impacted by, the rate of sales of our hardware. Management focuses on hardware sales as an indicator of current business success and a leading indicator of likely future recurring revenue from consumables and subscriptions. We expect our hardware sales to grow in the future as we increase penetration in our existing markets and expand into new markets.

Recurring revenue

We regularly assess trends relating to recurring revenue which includes consumables, services, and subscriptions. The consumables revenue stream includes metals, continuous fiber, and chopped fiber materials used by customers as print media. Our services revenue is made up of revenue generated from hardware maintenance contracts (referred to as success plans), software, and additive manufacturing training and education (which we also refer to as “Subscription Plans,” which we have sold as one package since the beginning of the second quarter of 2023). Our service revenue is generally realized over a period of one to three years. Recurring revenue was 42% and 37% of total revenue for the years ended December 31, 2024 and 2023, respectively. Our recurring revenue as a percentage of total revenue may vary based upon new product placements in the period as well as consumption trends impacted by macroeconomic factors, customer behavior, and the useful life of our hardware. As our cumulative historical hardware sales increase, recurring revenue on an absolute basis is expected to increase and over time should be an increasingly important contributor to our total revenue.

Go to market

We believe that we are in a strong position within the industry with our accessible solutions that offer users design flexibility and industrial strength parts. Accordingly, we continue to invest in marketing, sales, and operations necessary to scale our business and continue to gain market share and open new market opportunities. We have proven an ability to design, manufacture, and distribute products through channels that provide a high value to customers at gross margins higher than many of our competitors. In addition to our go to market strategy, our integrated platform of hardware, software and consumables has been core to our success and we will continue to drive value through research and development as we introduce smarter and more adaptive technology that is expected to improve our integrated platform and, ultimately, the value provided by our 3D printers. We believe these investments are critical to achieve long-term scalability, but expect the near term impacts will be a muting of our short term profitability.

Seasonality

Historically, the sales of our 3D printers have been subject to seasonality and we have seen higher hardware sales in the third and fourth quarters. We believe this trend is likely driven by available funds in federal capital budgets at the end of the third quarter and commercial budgets at year end which they direct towards the evolution of their manufacturing processes through investments in additive manufacturing.

Components of Results of Operations

Revenue

The majority of our revenue results from the sale of hardware, including our additive manufacturing products, and related consumables. We deliver products and services primarily through our value-added reseller ("VAR") network, who purchase and resell our products to end users. Hardware and consumables revenue is recognized upon transfer of control to the customer, which is typically the VAR, and generally takes place at the point of shipment. We also generate a portion of our revenue from hardware maintenance services and our premium software subscriptions. Revenue related to subscriptions is recognized ratably over the term of the subscription. Our VARs may provide installation services, as needed depending on the product.

Cost of revenue

Our cost of revenue consists of the cost of product, software subscriptions, maintenance services, personnel costs, third party logistics, freight, warranty fulfillment costs, and overhead.

Cost of products includes the manufacturing cost of our additive manufacturing products and consumables. We primarily utilize third party manufacturers for the production of our additive manufacturing hardware, and we utilize our own manufacturing facilities and personnel for the production of our consumables. The costs of revenue for internally manufactured products include the cost of raw materials, labor conversion costs, and overhead related to our manufacturing operations, including depreciation and amortization. Overhead costs include shipping, storage, and labor. Cost of services includes personnel-related costs associated with our customer success teams' provision of remote and on-site support services to our customers and the costs of replacement parts, as well as software costs. Our cost of revenue also includes indirect costs of providing our products and services to customers which consist primarily of reserves for excess and obsolete inventory and stock-based compensation.

We expect our cost of revenue to increase in absolute dollars in future periods as we expect our revenues to continue to grow.

Gross profit and gross margin

Our gross profit is calculated based on the difference between our revenues and cost of revenue. Gross margin is the percentage obtained by dividing gross profit by our revenue. Our gross profit and gross margin are, or may be, influenced by a number of factors, including:

- Market conditions and competition that may impact our pricing;
- Product mix changes between our printer product lines and consumables trends;
- The impact of global supply chain disruptions on the cost to both procure materials and ship materials and finished goods;
- Growth in the number of customers utilizing our additive manufacturing products and changes in customer utilization rates, which affects sales of our consumable materials and may result in excess or obsolete inventories;
- Our cost structure for manufacturing operations, including the extent to which we utilize contract manufacturers compared to in-house manufacturing, the ability to achieve economies of scale in our purchase volumes, and any impacts to changes in our manufacturing on our product warranty obligations; and
- Our ability to directly monetize the capabilities of our software solutions in the future.

We expect our gross margins to fluctuate over time, depending on the factors described above.

Research and development

Our research and development expenses represent costs incurred to support activities that advance the development of innovative additive manufacturing technology, new printer products, development of proprietary printing materials, as well as activities that enhance the functionality of our offerings. Our research and development expenses consist primarily of employee-related personnel expenses, prototypes, facilities costs, and engineering services. We believe our research and development department is staffed at a level that enables us to innovate and develop products beyond 2025.

Sales and marketing

Sales and marketing expenses consist primarily of personnel-related costs for our sales and marketing departments, costs related to sales commissions, trade shows, advertising, facilities costs, and other demand generation services.

General and administrative

General and administrative expenses consist primarily of personnel-related costs for our executive leadership and finance, human resources and IT departments. We believe our general and administrative costs have stabilized as we have completed our investments required to operate as a public company.

On September 20, 2024, we entered into the Settlement Agreement with Continuous Composites to settle outstanding litigation claims and counterclaims, which are further described in Part I, Item 3 – Legal Proceedings of this Annual Report on Form 10-K. We paid the first settlement payment of $18 million required under the Settlement Agreement on October 10, 2024, and are required to make three additional installment payments thereafter of $1 million, $2 million and $4 million in the fourth quarters of fiscal years 2025, 2026 and 2027, respectively.

The incremental amount due under the Settlement Agreement compared to the original verdict is determined to be representative of the amount attributable to the licensing of the patent rights contemplated under the Settlement Agreement and is recognized as an intangible asset of $5.5 million, after discount using a rate of 12%, to be amortized to cost of revenue over the life of the patents of 23 years. The future payments under the Settlement Agreement are secured by the Security Agreement and as such the Company has recorded a long-term settlement payable on the consolidated balance sheet of $5.2 million which will accrete $1.8 million of interest over the payment term recognized as interest expense.

Change in fair value of derivative liabilities

Change in fair value of derivative liabilities primarily includes the change in fair value of the contingent earnout liabilities and private placement warrant liability. All were accounted for as liabilities as of the date of the Merger, or acquisition, and remeasured to fair value at the end of the reporting period.

Other expense, net

Other expense includes other non-operating expenses.

Interest expense

Interest expense includes the interest from the intangible asset of $5.2 million from the Continuous Composites settlement that will accrete $1.8 million of interest over the payment term recognized as interest expense.

Interest income

Interest income includes interest earned on deposits and short-term investments.

Income taxes

We have recorded an immaterial income tax expense (benefit) each year since our inception. We have not realized material income tax benefits from the net operating losses or from the generated research and development tax credits as based upon the weight of available evidence, it is more likely than not that all of our net deferred tax assets will not be realized. We have recorded a valuation allowance against our net deferred tax assets at each balance sheet date.

The enactment of the Tax Cuts and Jobs Act (the "TCJA") in December 2017 significantly affected U.S. tax law by changing how the United States imposes tax on multinational corporations. For tax years beginning after December 31, 2021, the TCJA requires research and development costs to be capitalized and amortized over five or fifteen years, depending on if the costs are U.S. or foreign, respectively. As of December 31, 2024 and 2023, we have capitalized research and development costs net of amortization, which are maintained with a valuation allowance.

Results of Operations

The results of operations presented below should be reviewed in conjunction with the consolidated financial statements and notes included elsewhere in this Annual Report on Form 10-K. The following tables set forth our results of operations for the periods presented.

Comparison of the years ended December 31, 2024 and 2023

(dollars in thousands)	Year Ended December 31, 2024	2023	$ Change	% Change
Revenue	$ 85,090	$ 93,784	(8,694)	(9)%
Cost of revenue	44,020	49,370	(5,350)	(11)%
Gross profit	41,070	44,414	(3,344)	(8)%
Operating expenses				
Sales and marketing	31,672	37,830	(6,158)	(16)%
Research and development	32,444	40,737	(8,293)	(20)%
General and administrative	45,910	47,761	(1,851)	(4)%
Litigation judgment	17,723	-	17,723	100 %
Goodwill impairment	-	29,467	(29,467)	(100)%
Total operating expense	127,749	155,795	(28,046)	
Loss from operations	(86,679)	(111,381)	24,702	
Change in fair value of warrant liabilities	189	472	(283)	(60)%
Change in fair value of contingent earnout liability	(3,658)	1,036	(4,694)	(453)%
Other expense, net	(65)	(307)	242	(79)%
Interest expense	(848)	(373)	(475)	NM
Interest income	4,252	6,400	(2,148)	(34)%
Loss before income taxes	(86,809)	(104,153)	17,344	
Income tax benefit	(1,243)	(586)	(657)	112 %
Net loss	$ (85,566)	$ (103,567)	$ 18,001	

NM: Not meaningful

Revenue, cost of revenue, and gross margin

We earn revenue from the sale of hardware, consumables, and services contracts. The hardware revenue stream includes 3D metal printers, metal binder jetting printers, 3D composite printers, and sintering furnaces. The consumables revenue stream includes metals, continuous fiber, and chopped fiber materials used by customers as print media. The services revenue stream primarily consists of hardware maintenance services and software subscriptions.

The following table sets forth the changes in the components of gross margin for the years ended December 31, 2024 and 2023.

(dollars in thousands)	Year Ended December 31, 2024	2023	$ Change	% Change
Revenue	$ 85,090	$ 93,784	$ (8,694)	(9)%
Cost of revenue	44,020	49,370	(5,350)	(11)%
Gross profit	41,070	44,414	(3,344)	(8)%
Gross margin	48 %	47 %	—	1 %

Comparison of revenue

The following table disaggregates our revenue based on the nature of the products and services:

(in thousands)	Year Ended December 31, 2024	2023	$ Change	% Change
Hardware	$ 49,103	$ 59,287	$ (10,184)	(17)%
Consumables	23,394	23,996	(602)	(3)%
Services	12,593	10,501	2,092	20 %
Total Revenue	$ 85,090	$ 93,784	$ (8,694)	(9)%

Consolidated revenue for the year ended December 31, 2024 was $85.1 million compared with prior year revenue of $93.8 million representing a decrease of 9%, driven by a decline in hardware revenue and slightly offset by an increase in service revenue.

Hardware revenue decreased 17% for the year ended December 31, 2024 compared to the year ended December 31, 2023 as hardware revenue continues to be impacted by a challenging macroeconomic environment, competition, and pricing constraints. Consumables revenue decreased approximately 3% for the year ended December 31, 2024 compared to the year ended December 31, 2023. Services revenue increased approximately 20% for the year ended December 31, 2024 compared to the year ended December 31, 2023. The increase in services revenue was driven by the recurring nature of our services business and the launch of subscription offerings on April 1, 2023, as well as $1.2 million of non-recurring service revenue recorded in 2024.

Cost of revenue and gross profit

Consolidated cost of revenue for the year ended December 31, 2024 was $44.0 million compared to $49.4 million for the year ended December 31, 2023, representing a decrease of 11% due to fewer hardware sales in 2024. Gross profit for the year ended December 31, 2024 decreased 8% from $44.4 million during the year ended December 31, 2023 to $41.1 million. Gross profit margin for the year ended December 31, 2024 was 48% while the gross profit margin for the year ended December 31, 2023 was 47%. The increase in consolidated gross margin is primarily due to continued operational efficiencies and a shift in our product mix. In addition, our FX10 sales were more profitable in 2024 compared to 2023.

Operating expenses

The following table sets forth the components of operating expenses for the years ended December 31, 2024 and 2023.

	Year Ended December 31,					
	2024		**2023**		**Change**	
(dollars in thousands)	**Amount**	**% Revenue**	**Amount**	**% Revenue**	**$**	**%**
Operating expenses						
Sales and marketing	$ 31,672	37 %	$ 37,830	40 %	$ (6,158)	(16)%
Research and development	32,444	38 %	40,737	43 %	(8,293)	(20)%
General and administrative	45,910	54 %	47,761	51 %	(1,851)	(4)%
Litigation judgment	17,723	21 %	-	0 %	17,723	100 %
Goodwill impairment	-	0 %	29,467	31 %	(29,467)	(100)%
Total operating expenses	$ 127,749	150 %	$ 155,795	166 %	$ (28,046)	(18)%

Sales and marketing expenses decreased 16% for the year ended December 31, 2024, as compared to the year ended December 31, 2023. Headcount and contractor related costs decreased by $2.9 million primarily due to the restructuring in the third quarter of 2024. Events and travel costs decreased $1.1 million, public relations costs decreased $0.4 million, and other marketing costs decreased $0.2 million, all due to strategic cost management efforts.

Research and development expenses decreased 20% for the year ended December 31, 2024, as compared to the year ended December 31, 2023. The decrease in research and development expense was primarily due to a decrease in headcount related expense of $6.3 million due to the restructuring in the third quarter of 2024. Prototype research and development decreased $1.5 million due to the phase of development of projects.

General and administrative expenses decreased 4% for the year ended December 31, 2024, as compared to the year ended December 31, 2023. Notable changes period over period included the decrease in impairment of long-lived assets of $4.0 million related to the change in the fair value of the lease asset of our former headquarters, 480 Pleasant Street, during 2023. There was a decrease in headcount of $2.8 million due to the restructuring in the third quarter of 2024, as well as a decrease in software subscriptions of $0.4 million in 2024. These decreases were partially offset by transaction costs of $4.9 million related to the Nano Merger in 2024.

During 2023, we experienced a decline in actual and forecasted operating results prompting an impairment assessment of goodwill. As a result of this assessment, goodwill impairment of $29.5 million was recorded in the third quarter of 2023.

During the year ended December 31, 2024, we accrued $17.3 million to account for the verdict against us in the Continuous Composites case discussed further in Note 15 to our audited consolidated financial statements.

Change in fair value of derivative liabilities and contingent earnout liability, and other expense

The following table sets forth the fair value changes and other expense for the years ended December 31, 2024 and 2023:

	Year Ended December 31,			
(dollars in thousands)	**2024**	**2023**	**$ Change**	**% Change**
Change in fair value of derivative liabilities	$ 189	$ 472	$ (283)	(60)%
Change in fair value of contingent earnout liability	(3,658)	1,036	(4,694)	(453)%
Other expense, net	(65)	(307)	242	(79)%
Interest expense	(848)	(373)	(475)	127 %
Interest income	4,252	6,400	(2,148)	(34)%

The change in the fair value of the derivative and contingent earnout liability in the year ended December 31, 2024 compared to the year ended December 31, 2023 was primarily driven by the change in the fair value of the Teton development milestone earnout achievement of $0.6 million, and common stock price which decreased from $8.20 at December 31, 2023 to $3.14 at December 31, 2024, respectively, during each period.

The change in interest expense for the year ended December 31, 2024 compared to the year ended December 31, 2023 was primarily driven by the deferred revenue financing component that began in June 2023. In 2024 the deferred revenue financing component was $0.7 million compared to $0.4 million in 2023.

The change in other income (expense), net is primarily due to the change in fair market value from the earnout liability and the gain of $1.0 million recorded on the termination of the 480 Pleasant Street lease in the third quarter of 2024, partially offset by the $0.4 million loss on disposals of property, plant, and equipment during the year ended December 31, 2024.

The change in interest income is directly correlated to the interest rates during each period, slightly offset by the decrease in the cash balance in short-term investment and money market accounts.

Income tax expense (benefit)

We recorded a benefit of $1.2 million and $0.6 million for income taxes during the years ended December 31, 2024 and 2023, respectively.

Non-GAAP Net Profit (Loss)

In addition to our financial results determined in accordance with U.S. generally accepted accounting principles (“GAAP”), we believe that the below non-GAAP net profit (loss) financial measure, that excludes one-time charges and certain non-cash items, is useful in evaluating the performance of our business. We define non-GAAP net profit (loss) as net profit (loss) less stock-based compensation expense, net change in fair value of derivative liabilities and contingent earnout liabilities, and certain non-recurring expenses.

We monitor non-GAAP net profit (loss) as a measure of our overall business performance, which enables us to analyze our past and future performance without the effects of non-cash items and/or one-time charges. While we believe that non-GAAP net profit (loss) is useful in evaluating our business, non-GAAP net profit (loss) is a non-GAAP financial measure that has limitations as an analytical tool. Non-GAAP net profit (loss) can be useful in evaluating our performance by eliminating the effect of financing and non-cash expenses such as stock-based compensation, however, we may incur such expenses in the future which could impact future results. We also believe that the presentation of the non-GAAP financial measures in this Annual Report on Form 10-K provides an additional tool for investors to use in comparing our core business and results of operations over multiple periods with other companies in our industry, many of which present similar non-GAAP financial measures to investors.

In addition, other companies, including companies in our industry, may calculate non-GAAP metrics differently or not at all, which reduces the usefulness of this measure as a tool for comparison.

We recommend that you review the reconciliation of non-GAAP net profit (loss) to net income (loss), the most directly comparable GAAP financial measure, and that you not rely on any single financial measure to evaluate our business.

Non-GAAP Net Profit (Loss)

(dollars in thousands)	Year Ended December 31, 2024		2023	
Net loss	$	(85,566)	$	(103,567)
Stock compensation expense		11,975		13,987
Change in fair value of derivative liabilities		(189)		426
Change in fair value of contingent earnout liability		3,658		(1,036)
Amortization		1,508		1,024
Goodwill impairment		-		29,467
Litigation judgment		17,723		—
Non-recurring costs[1]		10,364		8,451
Non-GAAP net loss	$	(40,527)	$	(51,248)

[1]Non-recurring costs incurred during the year ended December 31, 2024 relate to one-time restructuring costs of $1.8 million, litigation expenses of $3.7 million, and transaction costs of $4.9 million. Non-recurring costs incurred during the year ended December 31, 2023 relate to long-lived asset impairment of $4.0 million, litigation expenses of $3.9 million, and one-time restructuring costs of $0.6 million.

Liquidity, Capital Resources and Risks and Uncertainties

On September 25, 2024, we entered into the Nano Merger Agreement to be acquired by Nano. If the Nano Merger is not ultimately consummated, we will need to seek additional sources of liquidity. If additional capital cannot be raised, there is substantial doubt that we will be able to continue as a going concern for the next twelve months. We have historically funded our operations primarily through the sale of convertible preferred stock, the proceeds from the Merger and reverse recapitalization including the sale of common stock, and the sale of our products. Since inception we have focused on growth, which has required ongoing investment to support scaling of our business, research and development efforts, and day to day operations. We had cash and cash equivalents of $53.6 million as of December 31, 2024. We incurred net losses of $85.6 million and $103.6 million for the years ended December 31, 2024 and 2023, respectively. Our estimates are based on the beliefs and assumptions currently available to us. We could exhaust our available capital resources sooner than we expect.

Currently we generate negative operating cash flows and may continue to do so as we focus on pursuing commercialization and product development. During the years ended December 31, 2024 and 2023 we generated net negative cash flows from operations of $61.3 million and $48.9 million, respectively. In addition, we have experienced declining revenue in recent years. For example, for the years ended December 31, 2024 and 2023, our revenue was $85.1 million and $93.8 million, respectively, which decrease we attribute in part to a variety of macroeconomic conditions, including pricing competition, increased interest rates and inflation. Our future capital requirements will depend on many factors, including our revenue growth rate, the timing and the amount of cash received from customers, the timing and extent of spending to support development efforts, expenses associated with our international expansion, the introduction of platform enhancements, and the continuing market adoption of The Digital Forge platform. We may be required to seek additional equity or debt financing. In the event that we require additional financing, we may not be able to raise such financing on terms acceptable to us or at all. If we are unable to raise additional capital or generate cash flows necessary to expand our operations and invest in continued innovation, we may not be able to compete successfully, which would harm our business, results of operations, and financial condition.

We are also subject to substantial ongoing payment obligations. For example, pursuant to the Settlement Agreement, we paid the first settlement payment of $18 million to Continuous Composites on October 10, 2024, and are required to make three additional installment payments thereafter of $1 million, $2 million and $4 million in the fourth quarters of fiscal years 2025, 2026 and 2027, respectively, which payments represent substantial ongoing payment obligations.

In addition, we have incurred substantial transaction costs associated with the pending Nano Merger, including fees for legal, financial accounting, and other advisory services, as well as other related expenses. For the year ended December 31, 2024, these costs totaled approximately $4.9 million, reflecting a significant financial commitment. We anticipate additional transaction costs related to the Nano Merger will continue to be incurred in fiscal year 2025.

Furthermore, our liquidity is impacted by operating restrictions imposed under the Nano Merger Agreement. For example, our ability to raise capital through any equity or debt financing is restricted during the pendency of the Nano Merger pursuant to the terms of the Nano Merger Agreement, which could make it more difficult for us to access capital sources needed to meet our financial commitments.

We have enacted cost savings measures to preserve capital. In November 2023, we announced a cost restructuring initiative that included an approximately 10% workforce reduction and other operational savings measures expected to deliver operating costs savings of approximately $9 - $12 million in 2024. Further, in August 2024, we announced an approximately $25 million cost reduction initiative that is expected to reduce the Company's operating expenses to a yearly run rate of approximately $70 million.

As a result of the foregoing, including continued transaction-related fee, operational expenses and restrictions on our ability to raise additional capital, we believe that there is substantial doubt about our ability to continue as a going concern through at least one year after the financial statements included with this Annual Report on Form 10-K are issued.

Cash flows

For the years ended December 31, 2024 and 2023

The following table sets forth a summary of Markforged's cash flows for the periods indicated:

	Year Ended December 31,		Change	
(dollars in thousands)	**2024**	**2023**	**$**	**%**
Net cash used in operating activities	$ (61,283)	$ (48,900)	$ (12,383)	(25)%
Net cash (used in) provided by investing activities	(1,426)	42,098	(43,524)	(103)%
Net cash used in financing activities	(1,156)	(520)	(636)	122 %
Effect of exchange rate changes on cash	15	(66)	81	(123)%
Net change in cash and cash equivalents	$ (63,850)	$ (7,388)	$ (56,462)	764 %

Cash flow from operations

Net cash used in operating activities for the years ended December 31, 2024 and 2023 was $61.3 million and $48.9 million, respectively. Operating cash flows and changes in working capital for comparative periods were as follows:

	Year Ended December 31,	
(dollars in thousands)	**2024**	**2023**
Operating cash flows before changes in working capital	$ (56,471)	$ (46,409)
Changes in working capital	(4,812)	(2,491)

Net cash used in operating activities increased by $12.4 million for the year ended December 31, 2024 compared to the year ended December 31, 2023. The increase in operating cash flows is primarily due to the $18.0 million litigation settlement payment made in October 2024. This was partially offset by an increase in accounts payable of $1.9 million, a decrease in our inventory of $2.5 million, and a decrease in our accounts receivable of $2.7 million.

Cash flow from investing activities

Net cash (used in) provided by investing activities for year ended December 31, 2024 and 2023 was ($1.4 million) and $42.1 million, respectively. In 2023, net proceeds from investments was $45.7 million as our investments matured. In addition, we invested an additional $3.6 million in property and equipment, primarily to complete the build-out of our new headquarters in 2023 compared to $1.4 million in total fixed asset purchases in 2024.

Cash flow from financing activities

Net cash used in financing activities increased $0.6 million during years ended December 31, 2024 and 2023. The change in financing activities was primarily driven by the payment of the Teton acquisition business earnout which resulted in $0.6 million additional financing cash outflow in 2024.

Critical accounting policies and estimates

Our discussion and analysis of our financial condition and results of operations are based on the historical consolidated financial statements included elsewhere herein. We prepared these financial statements in conformity with U.S. GAAP. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities at the dates of the financial statements and the reported amounts of revenues and expenses during the reporting periods. We base our estimates on historical experience and on various other assumptions we believe to be reasonable under the circumstances. We routinely evaluate these estimates, utilizing historical experience, consultation with experts and other methods we consider reasonable in the particular circumstances. Our results may differ from these estimates, and any effects on our business, financial position or results of operations resulting from revisions to these estimates are recorded in the period in which the facts that give rise to the revision become known. Changes in these estimates could materially affect our financial position, results of operations or cash flows. See the "Critical Accounting Policies and Estimates" section in "Management's Discussion and Analysis of Financial Condition and Results of Operations" and Note 2, "Significant Accounting Policies" in the Notes to Consolidated Financial Statements.

Intangible Assets

Intangible assets consist of identifiable intangible assets acquired, specifically, developed technology, customer relationships, and trade names. We evaluate definite-lived intangible assets for impairment when events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable through future operations. If indicators of impairment are present, we then compare the estimated undiscounted cash flows that the specific asset is expected to generate to its carrying value. If such assets are impaired, the impairment recognized is measured as the amount by which the carrying amount of the asset exceeds its fair value. We experienced a triggering event as of September 30, 2023 prompting impairment assessments of goodwill and long-lived assets, including definite-lived intangibles. The long-lived assets were determined to be recoverable, therefore the assessment did not result in an impairment of definite-lived intangible assets or other long-lived assets.

Revenue

Our customer contracts include multiple products and services. We are required to perform allocations of the contract value to the products and services deemed to be distinct performance obligations by U.S. GAAP in order to recognize revenue at the appropriate time. These allocations are based on a relative standalone selling price methodology, which requires us to determine the standalone selling price for each performance obligation. We utilize selling prices from standalone sales of the product or service when available. However, certain products are not sold on a standalone basis or do not have a sufficient history of standalone sales and we are required to estimate the standalone selling price for the purposes of our allocation. We utilize market information, historical selling practices, and other available information to produce as accurate an estimate as possible.

Inventory

Inventory is stated at lower of cost and net realizable value. Cost is based on a standard costing system which approximates the cost on a first in, first out method. We regularly review inventory for excess and obsolescence and records a provision to write down inventory to its net realizable value when carrying value is in excess of this value. The costs include materials, labor, and manufacturing overhead that relate to the acquisition of raw materials and production into finished goods. The net realizable value considers our intent and ability to utilize the inventory prior to perishing as well as the estimated selling price and costs of completion and sale. We regularly review our inventory on hand, product development plans, and sales forecasts to identify carrying values in excess of net realizable value.

Common Stock Warrants Liabilities

We assumed 5,374,984 publicly-traded warrants (“Public Warrants”) and 3,150,000 private placement warrants originally issued by AONE (“Private Placement Warrants” and, together with the Public Warrants, the “Common Stock Warrants”) upon the Merger, all of which were issued in connection with AONE’s initial public offering and subsequent overallotment and entitle the holder to purchase one share of the Common Stock at an exercise price of $115.00 per share. The Common Stock Warrants became exercisable the later of 30 days after we completed the Merger or 12 months from the closing of AONE’s initial public offering, but can be terminated on the earlier of 5 years after the Merger, liquidation of us, or the Redemption Date as determined by us. During the years ended December 31, 2024 and 2023, no Public Warrants or Private Placement Warrants were exercised. The Public Warrants are exercisable for cash unless certain conditions occur which would permit a cashless exercise, such as the failure to have an effective registration statement related to the shares issuable upon exercise or redemption by the Company under certain conditions. The Private Placement Warrants are not redeemable for cash so long as they are held by the initial purchasers or their permitted transferees but may be redeemable for Common Stock if certain other conditions are met. If the Private Placement Warrants are held by someone other than the initial purchasers or their permitted transferees, the Private Placement Warrants are redeemable by us and exercisable by such holders on the same basis as the Public Warrants.

We evaluated the Public Warrants and Private Placement Warrants and concluded that the Private Placement Warrants do not meet the criteria to be classified within stockholders’ equity. The agreement governing the Common Stock Warrants includes a provision that, if applied, could result in a different settlement value for the Private Placement Warrants depending on their holder. Because the holder of an instrument is not an input into the pricing of a fixed-for-fixed option on our ordinary shares, the Private Placement Warrants are not considered to be “indexed to our stock.” As the Private Placement Warrants meet the definition of a derivative, we recorded these warrants as liabilities on the consolidated balance sheet at fair value, with subsequent changes in their respective fair values recognized in the consolidated statements of operations at each reporting date as part of change in fair value of derivative liabilities, as described in Note 12. The provisions referenced above are not applicable to the Public Warrants which do not have differing settlement provisions based on the warrant holder. The Public Warrants are not precluded from being considered indexed to our stock and were recognized at fair value in stockholders' equity on the closing of the Merger.

Contingent Earnout Liability

In connection with the Reverse Recapitalization and pursuant to the Merger Agreement, A-Star, the sponsor of AONE (the "Sponsor") surrendered 261,000 shares ("Sponsor Earnout Shares") and eligible Markforged equity holders were entitled to receive as additional merger consideration 1,466,666 shares of our Common Stock ("Markforged Earnout Shares") upon the Company achieving certain Earnout Triggering Events (as described in the Merger Agreement and Note 11). The contingent obligations to issue Markforged Earnout Shares in respect of Markforged common stock and release from lock-up Sponsor Earnout Shares, are accounted for as liability classified instruments in accordance with Accounting Standards Codification Topic 815-40, as the Earnout Triggering Events that determine the number of Sponsor and Markforged Earnout Shares required to be released or issued, as the case may be, include events that are not solely indexed to the fair value of common stock of Markforged. The liability was recognized at the reverse recapitalization date and is subsequently remeasured at each reporting date with changes in fair value recorded in the consolidated statements of operations. The consummation of the Nano Merger constitutes an Earnout Triggering Event, and the Markforged Earnout Shares will be issued upon the closing of the Nano Merger.

Markforged Earnout Shares issuable to employees with vested equity awards and Earnout RSUs (as described in the Merger Agreement) issuable to employees with unvested equity awards are considered a separate unit of account from the Markforged Earnout Shares issuable in respect of Markforged Common Stock and are accounted for as equity classified stock compensation. The Earnout Shares issuable to employees with vested equity awards are fully vested upon issuance, thus there is no requisite service period and the value of these shares is recognized as a one-time stock compensation expense for the grant date fair value. Earnout RSUs are contingent upon an employee completing a service vesting condition, and as such, reflect a transaction in which we acquire employee services by offering to issue its shares, the amount of which is based in part on the share price of our Common Stock. Expense related to Earnout RSUs is recognized using graded vesting method and is recognized as compensation cost over the requisite service period for each separately vesting tranche for the largest Earnout RSU holders. The remaining awards have expense recognized ratably over the requisite service period for the Earnout RSUs.

Recent accounting pronouncements

Refer to Note 2 of our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for the recent accounting pronouncements that we have adopted and have not yet adopted.

JOBS Act Accounting Election

We are an "emerging growth company," as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. The JOBS Act permits companies with emerging growth company status to delay adopting new or revised accounting standards until those standards apply to private companies. We intend to use this extended transition period to enable us to comply with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date we (1) are no longer an emerging growth company or (2) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. Accordingly, our financial statements may not be comparable to companies that comply with the new or revised accounting standards as of public company effective dates.

We intend to rely on the other exemptions and reduced reporting requirements provided by the JOBS Act.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

We are a smaller reporting company as defined by Rule 12b-2 of the Exchange Act and are not required to provide the information otherwise required under this item. As of December 31, 2024, we had $53.6 million of cash and cash equivalents.

We have not engaged in any hedging activities since our inception and we do not expect to engage in any hedging activities with respect to the market risk to which we are exposed.

Internal control over financial reporting

In connection with the audit of our financial statements for the years ended December 31, 2024 and 2023, Markforged management identified material weaknesses in our internal controls. See the section titled "*Risk Factors, — General Risk Factors — We have identified material weaknesses in our internal control over financial reporting and may identify additional material weaknesses in the future or fail to maintain effective internal control over financial reporting, which may result in material misstatements of our consolidated financial statements or cause us to fail to meet our periodic reporting obligations.*"

JOBS Act accounting election

We are an "emerging growth company," as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. The JOBS Act permits companies with emerging growth company status to delay adopting new or revised accounting standards until those standards apply to private companies. We intend to use this extended transition period to enable us to comply with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date that we (1) are no longer an emerging growth company or (2) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. Accordingly, our financial statements may not be comparable to companies that comply with the new or revised accounting standards as of public company effective dates.

We intend to rely on the other exemptions and reduced reporting requirements provided by the JOBS Act.

Item 8. Financial Statements and Supplementary Data.

Our consolidated financial statements, together with the report of our independent registered public accounting firm, appear beginning on page F-1 of this Annual Report on Form 10-K for the year ended December 31, 2024.

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

None.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2024, as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Disclosure controls and procedures are designed to ensure that information required to be disclosed by the issuer in the reports that it files or submits under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the rules and forms of the SEC, and that such information is accumulated and communicated to management, including the principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure. Based upon that evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were not effective as of December 31, 2024 because of the material weaknesses in internal control over financial reporting described below.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Internal control over financial reporting is defined as a process designed by, or under the supervision of, our principal executive and principal financial officers and effected by our board of directors, management and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Our internal control over financial reporting includes those policies and procedures that:

- pertain to the maintenance of records, that in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

We assessed the effectiveness of our internal control over financial reporting as of December 31, 2024 using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control-Integrated Framework* (2013). Based on this evaluation, management concluded that the Company's internal control over financial reporting was not effective as of December 31, 2024 as a result of the material weaknesses described below.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis. The identified material weaknesses are as follows:

We did not design and maintain an effective control environment commensurate with our financial reporting requirements. Specifically, we lacked a sufficient complement of resources with (i) an appropriate level of accounting knowledge, experience and training to appropriately analyze, record and disclose accounting matters timely and accurately, and (ii) an appropriate level of knowledge and experience to establish effective processes and controls. Additionally, the lack of a sufficient number of professionals resulted in an inability to consistently establish appropriate authorities and responsibilities in pursuit of our financial reporting objectives, as demonstrated by, among other things, insufficient segregation of duties in our finance and accounting functions. This material weakness contributed to the following additional material weaknesses:

We did not design and maintain effective controls related to the period-end financial reporting process, including designing and maintaining formal accounting policies, procedures and controls to achieve complete, accurate and timely financial accounting, reporting and disclosures. Additionally, we did not design and maintain controls over the preparation and review of account reconciliations and journal entries, including maintaining appropriate segregation of duties.

We did not design and maintain effective controls related to the identification of and accounting for certain non-routine, unusual or complex transactions, including the proper application of U.S. GAAP of such transactions. Specifically, we did not design and maintain controls to timely identify and account for share repurchase transactions, warrant instruments, and performance based stock awards.

These material weaknesses resulted in audit adjustments to the following financial statement line items in the historical Markforged financial statements: operating expense, other expense, interest expense, other assets, other liabilities, additional paid in capital, treasury stock, retained earnings, note receivable—equity, and series D preferred stock. These adjustments were recorded prior to the issuance of the consolidated financial statements as of and for the years ended December 31, 2020 and 2019. Additionally, the material weakness related to the accounting for performance based stock awards resulted in audit adjustments to additional paid in capital and stock based compensation expense for the quarters ended June 30, 2021, September 30, 2021, December 31, 2021, and December 31, 2022. The material weakness related to accounting for warrant instruments resulted in the restatement of the previously issued financial statements of AONE, the entity we merged with as part of the Merger related to warrant liabilities and equity. Additionally, these material weaknesses could result in a misstatement of substantially all of our accounts or disclosures that would result in a material misstatement to the annual or interim consolidated financial statements that would not be prevented or detected.

We did not design and maintain effective controls over information technology ("IT") general controls for information systems that are relevant to the preparation of our financial statements. Specifically, we did not design and maintain (i) program change management controls for financial systems to ensure that information technology program and data changes affecting financial IT applications and underlying accounting records are identified, tested, authorized and implemented appropriately; (ii) user access controls to ensure appropriate segregation of duties and that adequately restrict user and privileged access to financial applications, programs, and data to appropriate Company personnel; (iii) computer operations controls to ensure that critical batch jobs are monitored, privileges are appropriately granted, and data backups are authorized and monitored; and (iv) testing and approval controls for program development to ensure that new software development is aligned with business and IT requirements. These IT deficiencies did not result in any misstatements to the financial statements, however, the deficiencies, when aggregated, could impact our ability to maintain effective segregation of duties, as well as the effectiveness of IT-dependent controls (such as automated controls that address the risk of material misstatement to one or more assertions, along with the IT controls and underlying data that support the effectiveness of system-generated data and reports) that could result in misstatements potentially impacting all financial statement accounts and disclosures that would result in a material misstatement to the annual or interim financial statements that would not be prevented or detected. Accordingly, management has determined these deficiencies in the aggregate constitute a material weakness.

Remediation of Material Weaknesses

Management has been actively engaged in remediation efforts to address the material weaknesses during 2021 through 2024 and these efforts will continue into fiscal year 2025. Our remediation efforts include the following measures:

We have hired additional accounting and IT personnel to bolster our reporting, technical accounting and IT capabilities. Additionally, we continue to design and implement controls to formalize roles and review responsibilities to align with our team's skills and experience and designing and implementing controls over segregation of duties.

We continue to design and implement controls related to the period-end financial reporting process, including formal accounting policies, procedures and controls to achieve complete, accurate and timely financial accounting, reporting and disclosures. Additionally, we continue to design and implement controls over the preparation and review of account reconciliations and journal entries.

We continue to design and implement controls to timely identify and account for non-routine, unusual or complex transactions and other technical accounting and financial reporting matters, including controls over the preparation and review of accounting memoranda addressing these matters.

We continue to design and implement IT general controls, including controls over program change management, the review and update of user access rights and privileges, controls over batch jobs and data backups, and program development approvals and testing.

We have engaged third-party specialists to assist with testing the operating effectiveness of controls over financial reporting to gain assurance that such controls are present and operating as designed, as well as to help review and update existing documentation of our internal controls for compliance with the Sarbanes-Oxley Act of 2002.

While we believe progress was made in 2024 to enhance and strengthen our internal control over financial reporting, management has concluded that the material weaknesses were not remediated as of December 31, 2024.

The material weaknesses will not be considered remediated until management completes the design and implementation of the measures described above and the controls operate for a sufficient period of time and management has concluded, through testing, that these controls are effective.

Limitations on the Effectiveness of Controls

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluations 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.

Changes in Internal Control over Financial Reporting

There were no changes to our internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) that occurred during the quarter ended December 31, 2024 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information.

Securities Trading Plans of Directors and Executive Officers

During the three months ended December 31, 2024, no director or officer of the Company adopted or terminated a “Rule 10b5-1 trading arrangement” or “non-Rule 10b5-1 trading arrangement,” as each term is defined in Item 408(a) of Regulation S-K.

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

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required under this item is incorporated herein by reference to the Company’s definitive proxy statement pursuant to Regulation 14A, which proxy statement will be filed with the Securities and Exchange Commission not later than 120 days after the close of the Company’s fiscal year ended December 31, 2024.

Code of Business Conduct and Ethics

We have adopted a code of business conduct and ethics for directors, officers, and employees, known as the Code of Business Conduct and Ethics. The Code of Business Conduct and Ethics is available on our website at https://investors.markforged.com under the Governance section of our Investor Relations page. We will promptly disclose on our website (i) the nature of any amendment to the policy that applies to our principal executive officer, principal financial officer, or controller, or persons performing similar functions and (ii) the nature of any waiver, including an implicit waiver, from a provision of the policy that is granted to one of these specified individuals, the name of such person who is granted the waiver and the date of the waiver. Shareholders may request a free copy of the Code of Business Conduct and Ethics from our Compliance Officer, c/o Markforged Holding Corporation, 60 Tower Road, Waltham, MA 02451.

Insider Trading Plan and Procedures

We have adopted an insider trading policy that is reasonably designed to promote compliance with applicable insider trading laws, rules, regulations, and NYSE listing standards.

Our insider trading policy prohibits our officers, directors, employees, designated consultants, and their affiliated persons from trading in company securities while in possession of material nonpublic information about the Company. The policy also prohibits tipping (i.e., disclosing material nonpublic information about the Company to others who may trade of the basis of that information). A copy of our insider trading policy is filed as Exhibit 19.1 to this Annual Report on Form 10-K. In addition, with regard to the Company's trading in its own securities, it is the Company's policy to comply with the federal securities laws and the applicable exchange listing requirements.

Under our insider trading policy, insiders may only trade in Company securities during open trading windows at a time when they do not possess material nonpublic information about the Company.

Our insider trading policy also expressly prohibits short sales; purchases or sales of puts, calls, or other derivative securities or hedging transactions; using company securities as collateral in a margin account; or pledging company securities as collateral for a loan.

Any waiver of the provisions of our insider trading policy requires approval of our Compliance Officer and all waivers are reported to our Board of Directors.

Item 11. Executive Compensation.

The information required under this item is incorporated herein by reference to the Company’s definitive proxy statement pursuant to Regulation 14A, which proxy statement will be filed with the Securities and Exchange Commission not later than 120 days after the close of the Company’s fiscal year ended December 31, 2024.

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

The information required under this item is incorporated herein by reference to the Company’s definitive proxy statement pursuant to Regulation 14A, which proxy statement will be filed with the Securities and Exchange Commission not later than 120 days after the close of the Company’s fiscal year ended December 31, 2024.

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

The information required under this item is incorporated herein by reference to the Company’s definitive proxy statement pursuant to Regulation 14A, which proxy statement will be filed with the Securities and Exchange Commission not later than 120 days after the close of the Company’s fiscal year ended December 31, 2024.

Item 14. Principal Accounting Fees and Services.

Our independent public accounting firm is PricewaterhouseCoopers LLP, Boston, Massachusetts, PCAOB ID 238.

The information required under this item is incorporated herein by reference to the Company's definitive proxy statement pursuant to Regulation 14A, which proxy statement will be filed with the Securities and Exchange Commission not later than 120 days after the close of the Company's fiscal year ended December 31, 2024.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

(1)For a list of the financial statements included herein, see Index to the Consolidated Financial Statements on page F-1 of this Annual Report on Form 10-K, incorporated into this Item by reference.

(2)Financial statement schedules have been omitted because they are either not required or not applicable or the information is included in the consolidated financial statements or the notes thereto.

(3)Exhibits: The exhibits required by Item 601 of Regulation S-K and Item 15(b) of this Annual Report are listed in the Exhibit Index below. The exhibits listed in the Exhibits Index are incorporated by reference herein.

Exhibit Number	Description
2.1	Agreement and Plan of Merger, dated as of February 23, 2021, by and among the Company, Caspian Merger Sub Inc., and MarkForged, Inc. (incorporated by reference to Annex A to Markforged Holding Corporation's Form S-4 filed on June 4, 2021).
2.2	Agreement and Plan of Merger, by and among Nano Dimension Ltd., Nano US II, Inc. and Markforged Holding Corporation dated September 25, 2024 (incorporated by reference to Exhibit 2.1 to Markforged Holding Corporation's Current Report on Form 8-K filed September 26, 2024).
3.1	Certificate of Incorporation of Markforged Holding Corporation (incorporated by reference to Exhibit 3.1 to Markforged Holding Corporation's Current Report on Form 8-K filed July 20, 2021).
3.2	Certificate of Amendment to the Certificate of Incorporation of Markforged Holding Corporation (incorporated by reference to Exhibit 3.1 to Markforged Holding Corporation's Current Report on Form 8-K filed June 18, 2024).
3.3	Certificate of Amendment to the Certificate of Incorporation of Markforged Holding Corporation (incorporated by reference 3.1 to Markforged Holding Corporation's Current Report on Form 8-K filed September 19, 2024).
3.4	Bylaws of Markforged Holding Corporation (incorporated by reference to Exhibit 3.2 to Markforged Holding Corporation's Current Report on Form 8-K filed July 20, 2021).
4.1	Warrant Agreement, dated August 17, 2020, between one and Continental Stock Transfer & Trust Company, as warrant agent (incorporated by reference to Exhibit 4.4 to one's Registration Statement on Form S-4/A filed June 4, 2021).
4.2	Specimen Common Stock Certificate of Markforged Holding Corporation (incorporated by reference to Exhibit 4.5 to one's Registration Statement on Form S-4/A filed June 4, 2021).
4.3*	Description of Securities.
10.1	Form of Indemnification Agreement (incorporated by reference to Exhibit 10.1 to Markforged Holding Corporation's Current Report on Form 8-K filed July 20, 2021).
10.2	Registration Rights Agreement, dated as of July 14, 2021, by and among Markforged Holding Corporation, A-star, certain affiliates of A-star and certain former stockholders of MarkForged, Inc. (incorporated by reference to Exhibit 10.5 to Markforged Holding Corporation's Current Report on Form 8-K filed July 20, 2021).
10.3	2021 Stock Option and Incentive Plan of Markforged Holding Corporation and forms of agreement thereunder (incorporated by reference to Exhibit 10.3 to Markforged Holding Corporation's Quarterly Report on Form 10-Q filed November 15, 2021).
10.4	Lock-up Agreement, dated as of July 14, 2021, by and between Markforged Holding Corporation, Inc. and the undersigned parties thereto (incorporated by reference to Exhibit 10.8 to Markforged Holding Corporation's Current Report on Form 8-K filed July 20, 2021).
10.5†	Non-Employee Director Compensation Policy (incorporated by referenced to Exhibit 10.9 to Markforged Holding Corporation's Current Report on Form 8-K filed July 20, 2021).
10.6†	2021 Employee Stock Purchase Plan (incorporated by referenced to Exhibit 10.10 to Markforged Holding Corporation's Current Report on Form 8-K filed July 20, 2021).
10.7†	Senior Executive Cash Incentive Bonus Plan (incorporated by reference to Exhibit 10.11 to Markforged Holding Corporation's Current Report on Form 8-K filed July 20, 2021).
10.8†	Executive Severance and Change in Control Plan (incorporated by reference to Exhibit 10.1 to Markforged Holding Corporation's Current Report on Form 8-K filed January 3, 2023).
10.9	First Amendment to Lease dated December 7, 2021, by and between 900 Middlesex Property Owner, LLC and MarkForged, Inc. (incorporated by reference to Exhibit 10.11 to Markforged Holding Corporation's Current Report on Form 8-K filed December 13, 2021).

10.10	Consent to Assignment and Fifth Amendment dated as of December 17, 2021 by and Between MarkForged, Inc., 1265 Main Office Subsidiary LLC and Clarks Americas, Inc. (incorporated by reference to Exhibit 10.1 to Markforged Holding Corporation's Current Report on Form 8-K filed December 22, 2021).
10.11	Assignment and Assumption Agreement dated as of December 17, 2021 by and between MarkForged, Inc. and Clarks America's Inc. (incorporated by reference to Exhibit 10.2 to Markforged Holding Corporation's Current Report on Form 8-K filed December 22, 2021).
10.12	Lease dated as of April 30, 2015 by between 1265 Main Office Subsidiary LLC and Clarks Americas, Inc. (including the First Amendment to Lease dated as of July 11, 2016, the Second Amendment to Lease dated as of January 17, 2017, the Third Amendment to Lease dated as of May 21, 2020, and the Fourth Amendment to Lease dated as of January 28, 2021) (incorporated by reference to Exhibit 10.3 to Markforged Holding Corporation's Current Report on Form 8-K filed December 22, 2021).
10.13#	Settlement and Patent License Agreement, dated September 20, 2024, by and between Markforged, Inc. and Continuous Composites Inc. (incorporated by reference to Exhbit 10.1 to Markforged Holding Corporation's Current Report on Form 8-K filed September 23, 2024).
10.14#	Security Agreement, dated September 20, 2024, by and between MarkForged, Inc. and Continuous Composites Inc. (incorporated by reference to Exhibit 10.2 to Markforged Holding Corporation's Current Report on Form 8-K filed September 23, 2024).
10.15	Form of Voting and Support Agreement, by and among Nano Dimension Ltd., Nano US II, Inc. and certain stockholders of Markforged Holding Corporation, dated September 25, 2024 (incorporated by reference to Exhibit 10.1 to Markforged Holding Corporation's Current Report on Form 8-K filed September 26, 2024).
19.1*	Markforged Holding Corporation Insider Trading Policy
21.1*	List of subsidiaries of the Registrant.
23.1*	Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm.
31.1*	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2*	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1*	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2*	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
97	Compensation Clawback Policy effective as of December 1, 2023 (incorporated by reference to Exhibit 97 to Markforged Holding Corporation's Annual Report on Form 10-K filed March 15, 2024).
101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because XBRL tags are embedded within the Inline XBRL document.
101.SCH	Inline XBRL Taxonomy Extension Schema with Embedded Linkbases document
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

* Exhibits filed herein. All exhibits not so designated are incorporated by reference to a prior filing, as indicated.

† Indicates a management contract or any compensatory plan, contract or arrangement

\# Certain confidential information contained in this exhibit has been omitted because it is both (i) not material and (ii) is the type that Markforged Holding Corporation treats as private or confidential.

\+ This certification will not be deemed "filed" for purposes of Section 18 of the Exchange Act, or otherwise subject to the liability of that section. Such certification will not be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Exchange Act, except to the extent specifically incorporated by reference into such filing.

Item 16. Form 10-K Summary

Not applicable.

SIGNATURES

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

	Markforged Holding Corporation	
Date: March 28, 2025	By:	/s/ Shai Terem **Shai Terem** **Chief Executive Officer** ***(Principal Executive Officer)***

POWER OF ATTORNEY AND SIGNATURES

Each person whose individual signature appears below hereby authorizes and appoints Shai Terem and Assaf Zipori, and each of them, with full power of substitution and resubstitution and full power to act without the other, as his or her true and lawful attorney-in-fact and agent to act in his or her name, place and stead and to execute in the name and on behalf of each person, individually and in each capacity stated below, and to file any and all amendments to this Annual Report on Form 10-K and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing, ratifying and confirming all that said attorneys-in-fact and agents or any of them or their or his or her substitute or substitutes may lawfully do or cause to be done by virtue thereof.

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

Name	Title	Date
/s/ Alan Masarek **Alan Masarek**	Director and Chairman of the Board	March 28, 2025
/s/ Shai Terem **Shai Terem**	Chief Executive Officer, Director (*Principal Executive Officer*)	March 28, 2025
/s/ Assaf Zipori **Assaf Zipori**	Chief Financial Officer (*Principal Financial and Accounting Officer*)	March 28, 2025
/s/ Edward T. Anderson **Edward T. Anderson**	Director	March 28, 2025
/s/ Michael Medici **Michael Medici**	Director	March 28, 2025
/s/ Paul Milbury **Paul Milbury**	Director	March 28, 2025
/s/ Carol Meyers **Carol Meyers**	Director	March 28, 2025
/s/ Antonio Rodriguez **Antonio Rodriguez**	Director	March 28, 2025
/s/ Aaron VanDevender **Aaron VanDevender**	Director	March 28, 2025
/s/ George Riedel **George Riedel**	Director	March 28, 2025

INDEX TO FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Markforged Holding Corporation

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Markforged Holding Corporation and its subsidiaries (the "Company") as of December 31, 2024 and 2023, and the related consolidated statements of operations, of comprehensive loss, of changes in stockholders' equity and of cash flows for the years then ended, including 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 as of December 31, 2024 and 2023, and the results of its operations and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

Substantial Doubt about the Company's Ability to Continue as a Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the consolidated financial statements, the Company has incurred net losses and negative cash flows from operations that raise substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (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 of these consolidated financial statements in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated 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 consolidated 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 consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ PricewaterhouseCoopers LLP
Boston, Massachusetts
March 28, 2025

We have served as the Company's auditor since 2019.

MARKFORGED HOLDING CORPORATION

CONSOLIDATED BALANCE SHEETS
As of December 31, 2024 and 2023
(In thousands, except share data)

	December 31, 2024	December 31, 2023
Assets		
Current assets		
Cash and cash equivalents	$ 53,629	$ 116,854
Accounts receivable, net of allowance for expected credit losses ($756 and $360, respectively)	20,545	24,059
Inventory	22,362	26,773
Prepaid expenses	2,689	2,756
Other current assets	2,029	2,022
Total current assets	101,254	172,464
Property and equipment, net	14,454	17,713
Intangible assets, net	19,717	17,128
Right-of-use assets	30,562	36,884
Other assets	2,929	3,763
Total assets	$ 168,916	$ 247,952
Liabilities and Stockholders' Equity		
Current liabilities		
Accounts payable	$ 16,338	$ 13,235
Accrued expenses	8,623	9,840
Deferred revenue	9,098	8,779
Short-term settlement payable (Note 15)	1,000	—
Lease liabilities	5,771	7,368
Other current liabilities	—	1,526
Total current liabilities	40,830	40,748
Long-term settlement payable (Note 15)	4,353	—
Long-term deferred revenue	4,609	6,083
Contingent earnout liability	5,037	1,379
Long-term lease liabilities	26,873	35,771
Other liabilities	711	2,361
Total liabilities	82,413	86,342
Commitments and contingencies		
Stockholders' equity		
Preferred stock, $0.0001 par value; 100,000,000 shares authorized at December 31, 2024 and December 31, 2023; no shares issued and outstanding at December 31, 2024 and December 31, 2023, respectively	—	—
Common stock, $0.0001 par value; 100,000,000 shares authorized at December 31, 2024 and December 31, 2023; 20,643,599 and 19,858,127 shares issued and outstanding at December 31, 2024 and December 31, 2023, respectively	21	19
Additional paid-in capital	378,431	366,281
Accumulated deficit	(290,230)	(204,664)
Accumulated other comprehensive loss	(1,719)	(26)
Total stockholders' equity	86,503	161,610
Total liabilities and stockholders' equity	$ 168,916	$ 247,952

See notes to the consolidated financial statements.

MARKFORGED HOLDING CORPORATION

CONSOLIDATED STATEMENTS OF OPERATIONS
For the Years Ended December 31, 2024 and 2023
(In thousands, except share data)

	Year Ended December 31,	
	2024	**2023**
Revenue	$ 85,090	$ 93,784
Cost of revenue	44,020	49,370
Gross profit	41,070	44,414
Operating expenses		
Sales and marketing	31,672	37,830
Research and development	32,444	40,737
General and administrative	45,910	47,761
Litigation Judgment	17,723	-
Goodwill impairment	-	29,467
Total operating expenses	127,749	155,795
Loss from operations	(86,679)	(111,381)
Change in fair value of derivative liabilities	189	472
Change in fair value of contingent earnout liability	(3,658)	1,036
Other expense, net	(65)	(307)
Interest expense	(848)	(373)
Interest income	4,252	6,400
Loss before income taxes	(86,809)	(104,153)
Income tax benefit	(1,243)	(586)
Net loss	$ (85,566)	$ (103,567)
Weighted average shares outstanding - basic and diluted	20,252,793	19,689,601
Net loss per share - basic and diluted	$ (4.22)	$ (5.26)

See notes to the consolidated financial statements.

MARKFORGED HOLDING CORPORATION

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
For the Years Ended December 31, 2024 and 2023
(In thousands)

	Year Ended December 31,	
	2024	**2023**
Net loss	$ (85,566)	$ (103,567)
Other comprehensive loss, net of taxes:		
Unrealized loss on available-for-sale marketable securities, net	—	(54)
Foreign currency translation adjustment	(1,693)	(1,040)
Total comprehensive loss	$ (87,259)	$ (104,661)

See notes to the consolidated financial statements.

MARKFORGED HOLDING CORPORATION

CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY
For the Years Ended December 31, 2024 and 2023
(In thousands, except share data)

	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Income (Loss)	Total
	Shares	Amount				
December 31, 2022	**19,456,095**	**$ 19**	**$ 352,564**	**$ (101,097)**	**$ 1,068**	**$ 252,554**
Exercise of common stock options	51,029	—	187	—	—	187
Stock vested under compensation plan less shares withheld to cover taxes	351,002	—	(457)	—	—	(457)
Stock-based compensation expense	—	—	14,039	—	—	14,039
Earnout stock-based compensation expense	—	—	(52)	—	—	(52)
Net loss	—	—	—	(103,567)	—	(103,567)
Other comprehensive loss	—	—	—	—	(1,094)	(1,094)
December 31, 2023	**19,858,126**	**$ 19**	**$ 366,281**	**$ (204,664)**	**$ (26)**	**$ 161,610**
Stock vested under compensation plan less shares withheld to cover taxes	516,201	-	(574)	-	-	(574)
Stock-based compensation expense	-	-	12,033	-	-	12,033
Earnout stock-based compensation expense	-	-	(58)	-	-	(58)
Issuance of Common Stock in connection with the reverse split	160,658	2	(1)	-	-	1
Issuance of Common Stock in connection with acquisition earnout achievement	108,614	-	750	-	-	750
Net loss	-	-	-	(85,566)	-	(85,566)
Other comprehensive loss	-	-	-	-	(1,693)	(1,693)
December 31, 2024	**$ 20,643,599**	**$ 21**	**$ 378,431**	**$ (290,230)**	**$ (1,719)**	**$ 86,503**

See notes to the consolidated financial statements.

MARKFORGED HOLDING CORPORATION

CONSOLIDATED STATEMENTS OF CASH FLOWS
For the Years Ended December 31, 2024 and 2023
(In thousands, except share data)

	For the Year Ended December 31, 2024	2023
Operating Activities:		
Net loss	$ (85,566)	$ (103,567)
Adjustments to reconcile net loss to cash used in operating activities		
Depreciation, amortization, and non-cash lease interest	12,026	12,670
Allowance for expected credit losses	646	(688)
Provision for excess and obsolete inventory	1,521	305
Change in fair value of derivative liabilities	(189)	426
Change in fair value of contingent earnout liability	3,658	(1,036)
Amortization (accretion) of (discounts) premiums on available-for-sale securities	—	(1,913)
Stock-based compensation expense	11,975	13,987
Loss on disposal of fixed assets	441	—
Gain on operating lease termination	(973)	—
Long-lived asset impairment	—	4,015
Goodwill impairment	—	29,467
Foreign exchange (gains) losses on intercompany transactions, net	(10)	(75)
Changes in operating assets and liabilities		
Accounts receivable	2,712	5,967
Inventory	2,547	(529)
Prepaid expenses	49	107
Other current assets	(30)	1,321
Other assets	209	(635)
Accounts payable and accrued expenses	1,636	(862)
Other current liabilities	(168)	26
Deferred revenue	(1,096)	648
Other long term liabilities	(1,405)	(669)
Other non-current lease liabilities	(9,266)	(7,865)
Net cash provided by (used in) operating activities	(61,283)	(48,900)
Investing Activities:		
Purchases of property and equipment	(1,426)	(3,591)
Proceeds from the sale of property, plant and equipment	—	37
Purchases of available-for-sale securities	—	(18,950)
Proceeds from sales and maturities of marketable securities	—	64,602
Net cash provided by (used in) investing activities	(1,426)	42,098
Financing Activities:		
Payment of acquisition-related contingent liabilities	(582)	—
Acquisition holdback payment	—	(250)
Proceeds from exercise of common stock options	—	187
Taxes paid related to net share settlement of equity awards	(574)	(457)
Net cash provided by (used in) provided by financing activities	(1,156)	(520)
Effect of exchange rate changes on cash	15	(66)
Net change in cash, cash equivalents, and restricted cash	(63,850)	(7,388)
Cash, cash equivalents, and restricted cash		
Beginning of year	118,284	125,672
End of period	$ 54,434	$ 118,284
Supplemental disclosures of cash flow information		
Cash and cash equivalents	$ 53,629	$ 116,854
Restricted cash in other non-current assets	805	1,430
Total cash, cash equivalents and restricted cash shown in the consolidated statements of cash flows	$ 54,434	$ 118,284
Non cash operating activities		
Common stock issued in connection with acquisition earnout achievement	750	—
Non cash financing and investing activities		
Purchase of property and equipment in accounts payable and accrued expenses	$ 4	$ 325
Acquisition of cross license	5,474	—
Common stock disbursed to settle acquisition holdback	—	250

See notes to the consolidated financial statements.

Note 1. Organization, Nature of the Business, and Risks and Uncertainties

Organization and Nature of Business

Unless otherwise indicated or the context otherwise requires, references to the “Company” and “Markforged” refer to the consolidated operations of Markforged Holding Corporation and its subsidiaries. References to “AONE” refer to the company prior to the consummation of the Merger and references to “Legacy Markforged” refer to MarkForged, Inc. and its consolidated subsidiaries prior to the consummation of the Merger.

Legacy Markforged was founded in 2013 to transform the manufacturing industry with high strength, cost effective parts using additive manufacturing. Markforged produces and sells 3D printers, materials, software, and other related services worldwide to customers who can build parts strong enough for the factory floor with significantly reduced lead time and cost. The printers print in plastic, nylon, metal, and the parts can be reinforced with carbon fiber for industry leading strength at an affordable price point.

On February 23, 2021, one, a Cayman Islands exempted company (“AONE”), entered into an Agreement and Plan of Merger (the “Merger Agreement”) with Caspian Merger Sub Inc., a wholly owned subsidiary of AONE (“Merger Sub”), and Legacy Markforged, pursuant to which (i) AONE would deregister as a Cayman Islands company and domesticate as a corporation in the State of Delaware and would be renamed “Markforged Holding Corporation” (the “Domestication”) and (ii) Merger Sub would merge with and into Legacy Markforged with Legacy Markforged surviving as a wholly owned subsidiary of Markforged Holding Corporation (the “Merger”). AONE’s shareholders approved the transactions contemplated by the Merger Agreement on July 13, 2021, and the Domestication and the Merger were completed on July 14, 2021 (the “Closing”).

Cash proceeds of the merger were funded through a combination of AONE’s $132.5 million of cash held in trust (after redemptions of $64.2 million) and an aggregate of $210.0 million in fully committed common stock transactions at $10.00 per share. Immediately prior to the Closing, Legacy Markforged repurchased shares of common stock from certain of its stockholders, for a total value of $45.0 million, referred to as the “Employee Transactions”. Total net proceeds upon Closing, net of the Employee Transactions and transaction costs paid at Closing of $27.1 million, were $288.8 million.

Reverse Stock Split

On September 19, 2024, the Company effected a 10-for-1 reverse stock split of the Company's Common Stock. All shares of Common Stock, stock-based instruments and per-share data included in these audited consolidated financial statements have been retroactively adjusted as though the stock split had been effected prior to all periods presented. As a result of the reverse stock split, the Company issued 160,658 additional shares of Common Stock to stockholders who would have otherwise received fractional shares of Common Stock post-reverse stock split.

Proposed Merger with Nano Dimension Ltd.

On September 25, 2024, the Company entered into an Agreement and Plan of Merger (the “Nano Merger Agreement”) with Nano Dimension Ltd., an Israeli company (“Nano”), and Nano US II, Inc., a Delaware corporation and an indirect, wholly owned subsidiary of Nano (“Nano Merger Sub”), pursuant to which Nano Merger Sub will merge with and into the Company (the “Nano Merger”), with the Company surviving the Nano Merger as an indirect wholly-owned subsidiary of Nano. Following the closing of the Nano Merger, the Company’s Common Stock (as defined below), will be delisted from the New York Stock Exchange (the “NYSE”) and will be deregistered under the Securities Exchange Act of 1934, as amended (the “Exchange Act”).

Subject to the terms and conditions set forth in the Nano Merger Agreement, at the effective time of the Nano Merger (the “Effective Time”), each outstanding share of common stock, par value $0.0001 per share, of the Company (“Common Stock”) (other than (i) shares of the Company’s preferred stock, par value $0.0001 per share (“Preferred Stock”), (ii) shares of Common Stock held by the Company as treasury stock or otherwise held directly by a Company subsidiary, Nano or Nano Merger Sub immediately prior to the Effective Time, and (iii) shares of Common Stock held by Company stockholders that are entitled to, and have properly demanded appraisal for such shares, in accordance with, and have complied in all respects with, Section 262 of the Delaware General Corporation Law (such shares, “Dissenting Shares” and together with clauses (i)-(iii), the “Excluded Shares”)), will be converted automatically into the right to receive an amount in cash equal to $5.00 per share, without interest, less any applicable tax withholdings. Immediately prior to the Effective Time, each Excluded Share will be cancelled and cease to exist and no consideration will be paid or payable in respect thereof.

The Nano Merger is subject to satisfaction or waiver of certain closing conditions, including receipt of required regulatory approval from the Committee on Foreign Investment in the United States ("CFIUS"). On October 24, 2024, the Company and Nano jointly submitted to CFIUS a declaration, and all accompanying materials required under Section 721 of the Defense Production Act of 1950, as amended, (the "CFIUS Declaration"), and the CFIUS Declaration assessment period expired on November 27, 2024. On November 27, 2024, CFIUS requested that the parties submit a full joint voluntary notice (the "CFIUS Notice"), which the parties submitted and which was accepted by CFIUS on January 14, 2025. At the end of the 45-day review period, on February 27, 2025, CFIUS notified the parties that it would extend its review into a 45-day investigation period. At any time prior to the expiration of the 45-day investigation period, CFIUS may request that the parties withdraw and re-file the CFIUS Notice which has the effect of restarting the initial 45-day review period and potential additional 45-day investigation period. CFIUS may reject the CFIUS Notice at any time after it has been accepted for certain reasons, including if the Company and/or Nano do not timely provide information requested by CFIUS or if the parties fail to reach an agreement on mitigation requirements imposed by CFIUS. As a result of CFIUS's review or investigation of the Nano Merger, CFIUS may: (i) conclude action under applicable regulations by determining that there are no unresolved national security concerns; (ii) send a report to the President of the United States (the "President") recommending that the Nano Merger be suspended or prohibited; or (iii) send a report to the President requesting the President's decision if: (a) CFIUS recommends that the President suspend or prohibit the Nano Merger; (b) the members of CFIUS are unable to reach a decision on whether to recommend that the President suspend or prohibit the Nano Merger; or (c) CFIUS requests that the President make a determination with regard to the Nano Merger. To determine that there are no unresolved national security concerns, CFIUS may impose mitigation measures and request that the parties enter into a National Security Agreement. Should CFIUS send a report to the President, the President will have up to 15 days to decide whether to suspend or prohibit the Nano Merger. The failure to obtain or delay in obtaining the required CFIUS approval has delayed and could further delay completion of the Nano Merger or impose additional costs or limitations on the Company or may result in the failure to close the Nano Merger.

For further information about the Nano Merger, please refer to the Nano Merger Agreement, a copy of which is filed as Exhibit 2.2 to this Annual Report on Form 10-K, and the Company's definitive Proxy Statement filed on Schedule 14A with the Securities and Exchange Commission on November 13, 2024.

Delisting of Public Warrants

On September 26, 2024, the NYSE notified the Company that the NYSE had determined to delist the Company's Public Warrants due to "abnormally low" trading price levels pursuant to Section 802.01D of the NYSE Listed Company Manual. The Company did not appeal NYSE's determination and the Public Warrants were delisted from NYSE on January 6, 2025.

Regaining Compliance with the NYSE's Minimum Bid Price Listing Requirement

On October 30, 2024, the NYSE notified the Company that it had regained compliance with the NYSE's minimum bid price listing requirement pursuant to Section 802.01C of the NYSE Listed Company Manual with respect to its Common Stock because the average closing price of the Common Stock exceeded $1.00 per share over a consecutive 30 trading-day period. The Company had previously been notified by the NYSE that it had fallen out of compliance with the NYSE's minimum bid price listing requirement on April 18, 2023 and November 17, 2023.

Liquidity Risks and Uncertainties

The Company has cash and cash equivalents of $53.6 million as of December 31, 2024. The Company incurred net losses of $85.6 million and $103.6 million for the years ended December 31, 2024 and 2023, respectively. On September 25, 2024, the Company entered into the Nano Merger Agreement to be acquired by Nano. If the Nano Merger is not ultimately consummated, the Company will need to seek additional sources of liquidity. If additional capital cannot be raised, there is substantial doubt that the Company will be able to continue as a going concern for the next twelve months. The Company has funded its operations to date primarily through the sale of convertible preferred stock, the proceeds from the Merger, including the sale of common stock, and the sale of its products. The accompanying consolidated financial statements have been prepared on a basis which assumes that the Company will continue as a going concern and contemplates the realization of assets and satisfaction of liabilities and commitments in the normal course of business.

Currently the Company generates negative operating cash flows and may continue to do so as the Company focuses on pursuing commercialization and product development. During the years ended December 31, 2024 and 2023 the Company generated net negative cash flows from operations of $61.3 million and $48.9 million, respectively. The Company has experienced declining revenue in 2024 compared to 2023 due in part to macroeconomic factors, pricing competition, increased interest rates, and rising inflation. The Company's future capital requirements will depend on many factors, including the Company's revenue growth rate, the timing and the amount of cash received from customers, the timing and extent of spending to support development efforts, expenses associated with the Company's international expansion, the introduction of platform enhancements, and the continuing market adoption of The Digital Forge platform. The Company may be required to seek additional equity or debt financing. In the event that the Company requires additional financing, the Company may not be able to raise such financing on terms acceptable to the Company or at all. If the Company is unable to raise additional capital or generate cash flows necessary to expand the Company's operations and invest in continued innovation, the Company may not be able to compete successfully, which would harm the Company's business, results of operations, and financial condition.

The Company has incurred substantial transaction costs associated with the pending Nano Merger, including fees for legal, financial accounting, and other advisory services, as well as other related expenses. For the year ended December 31, 2024, these costs totaled approximately $4.9 million, reflecting a significant financial commitment. The Company anticipates additional transaction costs related to the Nano Merger will continue to be incurred in fiscal year 2025.

Furthermore, the Company's liquidity is impacted by operating restrictions imposed under the Nano Merger Agreement. For example, the Company's ability to raise capital through any equity or debt financing is restricted during the pendency of the Nano Merger pursuant to the terms of the Nano Merger Agreement, which could make it more difficult for the Company to access capital sources needed to meet the Company's financial commitments.

The Company has enacted cost savings measures to preserve capital. In November 2023, the Company announced a cost restructuring initiative that included an approximately 10% workforce reduction and other operational savings measures expected to deliver operating costs savings of approximately $9 - $12 million in 2024. Further, in August 2024, the Company announced an approximately $25 million cost reduction initiative that is expected to reduce the Company’s operating expenses to a yearly run rate of approximately $70 million.

Pursuant to the Settlement Agreement, the Company paid the first settlement payment of $18 million to Continuous Composites on October 10, 2024, and is required to make three additional installment payments thereafter of $1 million, $2 million and $4 million in the fourth quarters of fiscal years 2025, 2026 and 2027, respectively, which payments represent substantial ongoing payment obligations.

There can be no assurance that the Nano Merger will close in a timely manner or at all. Further delays of the completion of the Nano Merger may impose additional costs or limitations on the Company or may result in the failure to close the Nano Merger in a timely manner or at all.

As a result of the foregoing, including continued transaction-related fees, operational expenses and restrictions on the Company's ability to raise additional capital, there is substantial doubt about our ability to continue as a going concern through at least one year after the financial statements included with this Annual Report on Form 10-K are issued.

The Company continues to monitor, analyze, and respond to evolving developments regarding supply chain disruptions and the economic downturn. The Company is unable to predict the ultimate impact that these factors will have on the business, future results of operations, financial position or cash flows. The potential risks to the Company including certain accounting estimates around its supply chain, accounts receivable, inventory and related provisions, and intangible assets, were assessed and had no material impact as of and for the year ended December 31, 2024. There may be changes to those estimates in future periods, and actual results could differ from those estimates.

Note 2. Summary of Significant Accounting Policies

The consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries. The Company’s fiscal year end is December 31 and, unless otherwise stated, all years and dates refer to the fiscal year.

Basis of Presentation

The consolidated financial statements of the Company have been prepared in accordance with US GAAP. All significant intercompany accounts and transactions have been eliminated in consolidation.

Reporting Currency

The Company's reporting currency is the U.S. Dollar, while the functional currencies of its foreign subsidiaries are the currencies of the primary economic environment in which each of them operate.

Use of Estimates

The preparation of the audited consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Management's significant estimates include allowance for expected credit losses, reserve for excess and obsolete inventory, fair value of contingent earnout liability, fair value of earnout share awards, fair value of the private placement warrant liability, assumptions in revenue recognition, and valuation of intangibles and goodwill. The Company evaluates its estimates based on historical experience, current conditions, and various other assumptions that it believes are reasonable under the circumstances.

Revenue Recognition

The Company recognizes revenue in accordance with Accounting Standards Codification (''ASC'') Topic 606, *Revenue from Contracts with Customers* ("ASC Topic 606").

Under ASC Topic 606, revenue is recognized when a customer obtains control of promised goods or services in an amount that reflects the consideration which the entity expects to be entitled to in exchange for those goods or services. To determine revenue recognition for arrangements that an entity determines are within the scope of the new revenue recognition accounting standard, the Company performs the following five steps:

- identifies the contract with a customer;
- identifies the performance obligations in the contract;
- determines the transaction price;
- allocates the transaction price to the performance obligations in the contract; and
- recognizes revenue when (or as) the entity satisfies a performance obligation.

Our customer contracts include multiple products and services. We are required to perform allocations of the contract value to the products and services deemed to be distinct performance obligations by U.S. GAAP in order to recognize revenue at the appropriate time. These allocations are based on a relative standalone selling price methodology, which requires us to determine the standalone selling price for each performance obligation. We utilize selling prices from standalone sales of the product or service when available. However, certain products are not sold on a standalone basis or do not have a sufficient history of standalone sales and we are required to estimate the standalone selling price for the purposes of our allocation. We utilize market information, historical selling practices, and other available information to produce as accurate an estimate as possible.

Cash and Cash Equivalents

The Company considers all highly liquid investments with original maturities of 90 days or less to be cash equivalents.

Restricted Cash

Restricted cash represents cash and cash equivalents that are restricted to withdrawal or use as of the reporting date.

Restricted cash as of December 31, 2024 and December 31, 2023 relates to deposits to secure letters of credit totaling $0.8 million and $1.4 million, respectively. The deposits are related to contracts that have a remaining term greater than twelve months, thus this cash is included in other noncurrent assets.

	December 31	
(in thousands)	**2024**	**2023**
Restricted cash in non-current assets, beginning of period	$ 1,430	$ 1,430
Cash released from restriction	(625)	—
Balance at end of period	$ 805	$ 1,430

Short-Term Investments

The Company invests its excess cash in fixed income instruments denominated and payable in U.S. dollars including U.S. treasury securities, commercial paper, corporate bonds and asset-backed securities in accordance with the Company's investment policy that primarily seeks to maintain adequate liquidity and preserve capital. Investments in marketable securities are recorded at fair value, and unrealized gains and losses are reported within accumulated other comprehensive income (loss) as a separate component of stockholders' equity until realized or until a determination is made that an other-than-temporary decline in market value has occurred. We consider impairments to be other than temporary if they are related to deterioration in credit risk or if it is likely we will sell the securities before the recovery of their cost basis. When such reductions occur, the cost of the investment is adjusted to fair value through recording a loss on investments in the consolidated statements of operations. Realized gains and losses and declines in the value of securities attributable to actual or expected losses are included in other expense, net in the consolidated statements of operations. All investments in marketable securities mature within one year.

The Company's cash equivalents and short-term investments are invested in the following:

	December 31, 2024			
(in thousands)	**Amortized Cost**	**Unrealized Gains**	**Unrealized Losses**	**Fair Value**
Money market funds	$ 46,313	$ —	$ —	$ 46,313
Total cash equivalents	$ 46,313	$ —	$ —	$ 46,313

	December 31, 2023			
(in thousands)	**Amortized Cost**	**Unrealized Gains**	**Unrealized Losses**	**Fair Value**
Money market funds	$ 110,775	$ —	$ —	$ 110,775
Total cash equivalents	$ 110,775	$ —	$ —	$ 110,775

Accounts Receivable and Allowance for Expected Credit Losses

Trade accounts receivable are recorded at the invoiced amount and do not bear interest. Credit losses are estimated for accounts receivable considered to be uncollectible based on management's assessment of collectability, which considers specific customers' abilities to meet their financial obligations, the length of time receivables are past due, and historical collection experience. If circumstances related to specific customers change, or economic conditions deteriorate such that past collection experience is no longer relevant, the Company's estimate of the recoverability of accounts receivable could be further reduced from the levels provided for in the consolidated financial statements.

The following presents the changes in the balance of the Company's allowance for expected credit losses:

	Year Ended December 31,	
(in thousands)	**2024**	**2023**
Balance at beginning of period	$ 360	$ 1,559
Provision adjustment	646	(688)
Write – offs	(250)	(511)
Balance at end of period	$ 756	$ 360

Fair Value of Financial Instruments

The Company is required to provide information according to the fair value hierarchy based on the observability of the inputs used in the valuation techniques. The fair value hierarchy ranks the quality and reliability of the information used to determine fair values. Financial assets and liabilities carried at fair value will be classified and disclosed in one of the following three categories:

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

Level 2 Inputs other than Level 1 that are observable, either directly or indirectly, 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 following table presents information about the Company's assets that are measured at fair value as of December 31, 2024 and 2023, and indicates the fair value hierarchy of the valuation:

	Fair Value Measurements December 31, 2024			
	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents:				
Money market funds	$ 46,313	$ —	$ —	$ 46,313
Total cash equivalents	$ 46,313	$ —	$ —	$ 46,313
Total assets	$ —	$ —	$ —	$ —
Liabilities:				
Contingent earnout liability	$ 5,037	$ —	$ —	$ 5,037
Total liabilities	$ 5,037	$ —	$ —	$ 5,037

	December 31, 2023			
	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents:				
Money market funds	$ 110,775	$ —	$ —	$ 110,775
Total cash equivalents	$ 110,775	$ —	$ —	$ 110,775
Total assets	$ 110,775	$ —	$ —	$ 110,775
Liabilities:				
Contingent earnout liability	$ —	$ —	$ 1,379	$ 1,379
Private placement warrant liability	—	—	189	189
Teton acquisition contingent earnout liability	—	—	1,500	1,500
Total liabilities	$ —	$ —	$ 3,068	$ 3,068

The Company historically remeasured its Private Placement Warrants (as defined below) at fair value at each reporting period using Level 3 inputs via the Binomial Lattice Model. The valuation of the earnout shares was historically based on a Monte Carlo simulation. The significant assumptions used in preparing the above models as well as fair value methods used as of December 31, 2024 are disclosed in Note 12 Stock Warrants and Note 11 Earnout.

The Teton Software Simulation ("Teton") contingent earnout was related to development and business milestone metrics estimated using a scenario-based approach discussed in Note 2, Contingent Earnout Liability. The Teton development milestone was met and settled in 2022. The Teton business milestone was met in the first quarter of 2024 and settled in the second quarter of 2024. The fair value level of the contingent earnout liability was transferred from level 3 to level 1 in the third quarter of 2024.

(in thousands)	Contingent Earnout Liability	Private Placement Warrant Liability	Teton Acquisition Contingent Earnout Liability	Total
Fair Value as of December 31, 2022	$ 2,415	$ 661	$ 602	$ 3,678
Change in fair value	(1,036)	(472)	898	(610)
Fair Value as of December 31, 2023	$ 1,379	$ 189	$ 1,500	$ 3,068
Fair Value as of December 31, 2023	$ 1,379	$ 189	$ 1,500	$ 3,068
Change in fair value	3,658	(189)	—	3,469
Settlement of liability acquired as part of acquisitions	—	—	(1,500)	(1,500)
Fair Value as of December 31, 2024	$ 5,037	$ —	$ —	$ 5,037

Concentration of Credit Risk

Financial instruments which potentially expose the Company to concentrations of credit risk consist primarily of cash and cash equivalents held on deposit at one financial institution and accounts receivable. The Company does not require collateral from customers for amounts owed. As of and for the year ended December 31, 2024, no customers represented greater than 10% of the accounts receivable balance or total revenue. As of and for the year ended December 31, 2023, no customers represented greater than 10% of the accounts receivable balance and total revenue. Historically, the Company has not experienced any significant credit loss related to any individual customer.

Property and Equipment

Property and equipment are recorded at cost and are depreciated over their estimated useful lives using the straight-line method. Upon retirement or sale, the cost of assets disposed of and the related accumulated depreciation are removed from the accounts and any resulting gain or loss is included in the determination of net profit or loss. Repairs and maintenance costs are expensed as incurred.

The cost of property and equipment is depreciated based upon the following asset lives:

Asset Classification	Estimated Useful Life
Machinery and equipment	5 years
Leasehold improvements	Shorter of estimated useful life or remaining lease term
Computer equipment	3 years
Computer software	3 years
Furniture and fixtures	3 years

Impairment of Long-Lived Assets

The Company evaluates whether events or circumstances have occurred that indicate that the estimated remaining useful life of its long-lived assets may warrant reassessment or that the carrying value of these assets may not be recoverable. When a triggering event is identified, management assesses the recoverability of the asset group, which is the lowest level where identifiable cash flows are largely independent, by comparing the expected undiscounted cash flows of the asset group to the carrying value. When the carrying value is not recoverable and an impairment is determined to exist, the asset group is written down to fair value.

The Company determined the Continuous Composites litigation judgment discussed in Note 15 was a triggering event as of March 31, 2024. The undiscounted cash flows of the asset groups were determined to exceed carrying value, as such there was not any impairment to long-lived assets as of March 31, 2024.

The Company exited certain leased facilities during fiscal year 2023 and is in the process of seeking subleases for those properties. The Company recorded a non-cash, pre-tax and after-tax impairment charge of $4.0 million during the three months ended June 30, 2023 related to the operating lease right-of-use (“ROU”) asset recorded for our former headquarters at 480 Pleasant Street, Watertown, MA 02472 (“480 Pleasant Street”) within the general and administrative expense caption of the consolidated statements of operations. The impairment was determined by comparing the fair value of the impacted ROU asset to the carrying value of the asset as of the impairment measurement date, as required under ASC Topic 360, Property, Plant, and Equipment, using Level 2 inputs. The fair value of the ROU asset was based on the estimated sublease income for certain facilities taking into consideration the time period it will take to obtain a sublessor, the applicable discount rate and the sublease rate. The lease for 480 Pleasant Street was terminated in the third quarter of 2024 and the Company recorded a gain of $1.0 million on the termination of the 480 Pleasant Street lease within the other expense, net caption of the consolidated statement of operations.

Inventory

Inventory is stated at lower of cost and net realizable value. Cost is based on a standard costing system which approximates the cost on a first in, first out method. The Company regularly reviews inventory for excess and obsolescence and records a provision to write down inventory to its net realizable value when carrying value is in excess of this value. The costs include materials, labor, and manufacturing overhead that relate to the acquisition of raw materials and production into finished goods. The net realizable value considers our intent and ability to utilize the inventory prior to perishing as well as the estimated selling price and costs of completion and sale. We regularly review our inventory on hand, product development plans, and sales forecasts to identify carrying values in excess of net realizable value.

Cost of Revenue

Cost of revenue is primarily comprised of cost of product and software subscriptions, maintenance services, personnel-related costs, third party logistics, warranty and maintenance fulfillment costs, and overhead. For the production of consumables, the

Company utilizes its internal manufacturing facilities and personnel, while for the production of the Company's additive manufacturing hardware, third party manufacturers are utilized.

For internally manufactured products, the cost of revenue includes raw material, labor conversion costs, and overhead related to the manufacturing operations, inclusive of associated depreciation. Cost of revenue for maintenance services is comprised of costs associated with the Company's customer success teams' provision of remote and on-site support services to customers in addition to the cost of replacement parts.

The Company's cost of revenue also includes indirect costs of providing products and services to its customers. These indirect costs consist primarily of estimates for excess and obsolete inventory, warranty, and stock-based compensation.

Research and Development

The Company expenses all research and development costs as incurred. These costs consist mainly of employee compensation and other personnel-related costs, product prototypes, facility costs, as well as engineering services.

Sales and Marketing

Sales and marketing costs are expensed as incurred and are primarily comprised of personnel-related costs for the Company's sales and marketing departments, costs related to sales commissions, trades shows, facilities costs, as well as advertising and other demand generating services. Sales and marketing expenses includes advertising costs of $2.2 million during 2024 and 2023, respectively.

Shipping and Handling Costs

The Company recognizes shipping and handling costs in cost of revenue within the consolidated statements of operations. When shipping and handling services are provided subsequent to the point in time control is transferred, the Company accounts for the shipping and handling services as a fulfillment activity and accrues the related costs.

Stock-Based Compensation

The Company recognizes expense for stock-based compensation awards based on the estimated fair value of the award on the date of grant, which is amortized on a straight-line basis over the employee's or director's requisite service period for service based awards, generally the vesting period of the award. Awards containing market and/or performance conditions are recognized using the graded vesting method, which is an accelerated expense attribution method.

The Company used the Black-Scholes pricing model to estimate the fair value of options on the date of grant. The use of a valuation model requires management to make certain assumptions with respect to selected model inputs. The Company grants stock options and restricted stock units at exercise prices determined equal to the fair value of common stock on the date of the grant, as determined by the Board of Directors. The fair value of the Company's common stock at each measurement date prior to the merger was based on a number of factors, including the results of third-party valuations, the Company's historical financial performance, and observable arms-length sales of the Company's capital stock including convertible preferred stock, and the prospects of a liquidity event, among other inputs. The computation of expected option life is based on an average of the vesting term and the maximum contractual life of the Company's stock options, as the Company does not have sufficient history to use an alternative method to the simplified method to calculate an expected life for employees. The Company estimates an expected forfeiture rate for stock options, which is factored into the determination of stock-based compensation expense. The volatility assumption is based on the historical and implied volatility of the Company's peer group with similar business models. The risk-free interest rate is based on U.S. Treasury zero-coupon issues with a remaining term equal to the expected life assumed at the date of grant. The dividend yield percentage is zero because the Company does not currently pay dividends nor does the Company intend to do so in the future.

These estimates involve inherent uncertainties and the use of different assumptions may have resulted in stock-based compensation expense that was different from the amounts recorded.

Warranty Reserves

Substantially all of the Company's hardware products are covered by a standard assurance warranty of one year. In the event of a failure of a product covered by this warranty, the Company may repair or replace the product, at its option. The Company's warranty reserve reflects estimated material and labor costs for potential or actual product issues for which the Company expects to incur an obligation. The Company periodically assesses the appropriateness of the warranty reserve and adjusts the amount as necessary. If the data used to calculate the appropriateness of the warranty reserve are not indicative of future requirements, additional or reduced warranty reserves may be necessary.

Warranty reserves are included within accrued expenses on the consolidated balance sheets. The following table presents changes in the balance of the Company's warranty reserve:

	Year Ended December 31,	
(in thousands)	**2024**	**2023**
Balance at beginning of period	$ 886	$ 620
Additions to warranty reserve	848	1,397
Claims fulfilled	(1,003)	(1,131)
Balance at end of period	$ 731	$ 886

Warranty reserve is recorded through cost of revenue in the consolidated statements of operations.

Common Stock

The holders of the common stock are entitled to one vote for each share held at all meetings of stockholders (and written actions in lieu of meetings).

Dividends may be declared and paid on common stock from funds lawfully available as and when determined by the Board of Directors and subject to any preferential dividend rights of any then outstanding preferred stock. Through the year ended December 31, 2024, no dividends had been declared.

Profit (Loss) Per Share

Basic profit (loss) per common share is calculated by dividing net profit (loss) attributable to common stockholders, less any participating dividends, by the weighted average number of common shares outstanding during the applicable period. Diluted profit (loss) per share include shares issuable upon exercise of outstanding stock options and stock-based awards where the conversion of such instruments would be dilutive. The Company calculates this through the treasury stock method. See Note 16 for further information.

Income Taxes

The Company files U.S. federal and state tax returns where applicable. The non-U.S. subsidiaries file income tax returns in their respective jurisdictions. The Company accounts for income taxes under the asset and liability method, which recognizes deferred tax assets or liabilities for the expected future tax consequences based on the differences between the financial statement and income tax bases of assets and liabilities using the enacted marginal tax rate, in effect when the differences are expected to reverse. Valuation allowances are provided, if based on the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized. Management judgment is required in determining the Company's provision for income taxes, the Company's deferred tax assets and liabilities, and any valuation allowance recorded against those net deferred tax assets.

The Company follows the authoritative guidance on accounting for and disclosure of uncertainty in tax positions which requires the Company to determine whether a tax position of the Company is more likely than not to be sustained upon examination, including resolution of any related appeals of litigation processes, based on the technical merits of the position. For tax positions meeting the more-likely-than-not threshold, the tax amount recognized in the financial statements is reduced to the largest benefit that has a greater than fifty percent likelihood of being realized upon the ultimate settlement with the relevant taxing authority.

Loss Contingencies

Liabilities for loss contingencies arising from claims, assessments, litigation, fines, and penalties and other sources are recorded when it is probable that a liability has been incurred and the amount can be reasonably estimated. Legal costs for loss contingencies are expensed as incurred.

Common Stock Warrant Liabilities

The Company assumed 5,374,984 publicly-traded warrants (“Public Warrants”) and 3,150,000 private placement warrants originally issued by AONE (“Private Placement Warrants” and, together with the Public Warrants, the “Common Stock Warrants”) upon the Merger, all of which were issued in connection with AONE’s initial public offering and subsequent overallotment and entitle the holder to purchase one share of the Common Stock at an exercise price of $11.50 per share. The Common Stock Warrants became exercisable the later of 30 days after the Company completed the Merger or 12 months from the closing of AONE’s initial public offering, but can be terminated on the earlier of 5 years after the Merger, liquidation of the Company, or the Redemption Date as determined by the Company. During the years ended December 31, 2024 and 2023, no Public Warrants or Private Placement Warrants were exercised. The Public Warrants are exercisable for cash unless certain conditions occur which would permit a cashless exercise, such as the failure to have an effective registration statement related to the shares issuable upon exercise or redemption by the Company under certain conditions. The Private Placement Warrants are not redeemable for cash so long as they are held by the initial purchasers or their permitted transferees but may be redeemable for common stock if certain other conditions are met. If the Private Placement Warrants are held by someone other than the initial purchasers or their permitted transferees, the Private Placement Warrants are redeemable by the Company and exercisable by such holders on the same basis as the Public Warrants.

The Company evaluated the Public Warrants and Private Placement Warrants and concluded that the Private Placement Warrants do not meet the criteria to be classified within stockholders’ equity. The agreement governing the Common Stock Warrants includes a provision that, if applied, could result in a different settlement value for the Private Placement Warrants depending on their holder. Because the holder of an instrument is not an input into the pricing of a fixed-for-fixed option on the Company’s ordinary shares, the Private Placement Warrants are not considered to be “indexed to the Company’s own stock.” As the Private Placement Warrants meet the definition of a derivative, the Company recorded these warrants as liabilities on the consolidated balance sheet at fair value, with subsequent changes in their respective fair values recognized in the consolidated statements of operations at each reporting date as part of change in fair value of derivative liabilities, as described in Note 12. The provisions referenced above are not applicable to the Public Warrants which do not have differing settlement provisions based on the warrant holder. The Public Warrants are not precluded from being considered indexed to the Company’s stock and were recognized at fair value in stockholders’ equity on the closing of the Merger.

Contingent Earnout Liability

In connection with the Reverse Recapitalization and pursuant to the Merger Agreement, A-Star, the sponsor of AONE (the "Sponsor") surrendered 261,000 shares ("Sponsor Earnout Shares") and eligible Markforged equity holders were entitled to receive as additional merger consideration 1,466,666 shares of the Company’s Common Stock ("Markforged Earnout Shares") upon the Company achieving certain Earnout Triggering Events (as described in the Merger Agreement and Note 11). The contingent obligations to issue Markforged Earnout Shares in respect of Markforged common stock and release from lock-up Sponsor Earnout Shares, are accounted for as liability classified instruments in accordance with Accounting Standards Codification Topic 815-40, as the Earnout Triggering Events that determine the number of Sponsor and Markforged Earnout Shares required to be released or issued, as the case may be, include events that are not solely indexed to the fair value of common stock of Markforged. The liability was recognized at the reverse recapitalization date and is subsequently remeasured at each reporting date with changes in fair value recorded in the consolidated statements of operations.

Markforged Earnout Shares issuable to employees with vested equity awards and Earnout RSUs (as described in the Merger Agreement) issuable to employees with unvested equity awards are considered a separate unit of account from the Markforged Earnout Shares issuable in respect of Markforged common stock and are accounted for as equity classified stock compensation. The Earnout Shares issuable to employees with vested equity awards are fully vested upon issuance, thus there is no requisite service period and the value of these shares is recognized as a one-time stock compensation expense for the grant date fair value. Earnout RSUs are contingent upon an employee completing a service vesting condition, and as such, reflect a transaction in which the Company acquires employee services by offering to issue its shares, the amount of which is based in part on the Company’s share price. Expense related to Earnout RSUs is recognized using graded vesting over the requisite service period for the Earnout RSUs.

The estimated fair values of the Sponsor Earnout Shares, Markforged Earnout Shares, and Earnout RSUs were determined by using a Monte Carlo simulation valuation model using a distribution of potential outcomes on a monthly basis over the five-year Earnout Period as defined in Note 11. The preliminary estimated fair values of Sponsor Earnout Shares, Markforged Earnout Shares, and Earnout RSUs were determined using the most reliable information available, including the current Company Common Stock price, expected volatility, risk-free rate, expected term and dividend rate.

The contingent earnout liability was categorized as a Level 3 fair value measurement (see Fair Value of Financial Instruments accounting policy as described above) because the Company estimated projections during the Earnout Period utilizing unobservable inputs. Contingent earnout payments involve certain assumptions requiring significant judgment and actual results can differ from assumed and estimated amounts.

The consummation of the Nano Merger constitutes an Earnout Triggering Event, and the Markforged Earnout Shares will be issued upon the closing of the Nano Merger. The valuation of the Markforged Earnout Shares and Sponsor Earnout Shares was based on the closing price of Common Stock as of December 31, 2024, as the triggering event of a change in control of the Company was determined to be probable as a result of the pending Nano Merger and reflected in the stock price. As such, the contingent earnout liability was categorized as a Level 1 fair value measurement as of December 31, 2024.

Teton Software Simulation Contingent Earnout

Contingent consideration represents potential future payments that the Company may be required to pay in the event negotiated milestones are met in connection with a business acquisition. Contingent consideration is recorded as a liability at the date of acquisition at fair value. The fair value of contingent consideration related to the development milestone and business milestone metrics is estimated using a scenario-based approach, which is a special case of the income approach that uses several possible future scenarios. Under this approach, the value of the milestone payment is calculated as the probability-weighted payment across all scenarios. Significant increases or decreases in any of the probabilities of success or changes in expected timelines for achievement of any of the milestones could result in a significantly higher or lower fair value of the contingent consideration liability. The development milestone related to product technical milestones was achieved and settled in 2022. The business related contingent consideration, which is based on stated sales or usage metrics, was met in the first quarter of 2024 and settled in the second quarter of 2024.

Leases

The Company accounts for leases in accordance with ASC Topic 842, Leases (“ASC 842”). In accordance with ASC 842, the Company determines whether an arrangement is or contains a lease at inception. A contract is or contains a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. The Company classifies leases at the lease commencement date, when control of the underlying asset is transferred from the lessor to the lessee, as operating or finance leases and records a right-of-use (“ROU”) asset and a lease liability on the consolidated balance sheet for all leases with an initial lease term of greater than 12 months. The Company has elected to not recognize leases with a lease term of 12 months or less on the balance sheet and will recognize lease payments for such short-term leases as an expense on a straight-line basis over the lease term.

The Company enters into contracts that contain both lease and non-lease components. Non-lease components may include maintenance, utilities, and other operating costs. For leases of real estate, the Company combines the lease and associated non-lease components in its lease arrangements as a single lease component. Variable costs, such as utilities or maintenance costs, are not included in the measurement of right-of-use assets and lease liabilities, but rather are expensed when the event determining the amount of variable consideration to be paid occurs.

Finance and operating lease assets and liabilities are recognized at the lease commencement date based on the present value of the lease payments over the lease term using the discount rate implicit in the lease if readily determinable. If the rate implicit is not readily determinable, the Company utilizes its incremental borrowing rate based upon the available information at the lease commencement date. ROU assets are further adjusted for initial direct costs, prepaid rent, or incentives received. Operating lease payments are expensed using the straight-line method as an operating expense over the lease term. The Company’s lease terms may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise that option. Finance lease assets are amortized to depreciation expense using the straight-line method over the shorter of the useful life of the related asset or the lease term. Finance lease payments are bifurcated into (i) a portion that is recorded as interest expense and (ii) a portion that reduces the finance liability associated with the lease. The Company did not have any finance leases during the years ended December 31, 2024 and 2023.

Business Combinations

The Company allocates the purchase price of acquired companies to the tangible and intangible assets acquired and liabilities assumed based on their estimated fair values. The Company generally values the identifiable intangible assets acquired using a discounted cash flow model. The significant estimates used in valuing certain of the intangible assets, include, but are not limited to future expected cash flows of the asset, discount rates to determine the present value of the future cash flows and expected technology life cycles. Intangible assets are amortized over their estimated useful life; the period over which the Company anticipates generating economic benefit from the asset. Fair value adjustments subsequent to the acquisition date, that are not measurement period adjustments, are recognized in earnings.

Goodwill

Goodwill represents the future economic benefits arising from other assets acquired in a business combination that is not individually identified and separately recorded. The excess of the purchase price over the estimated fair value of net assets of businesses acquired in a business combination is recognized as goodwill. Goodwill is not amortized but is tested for impairment at least annually, or as circumstances indicate that the carrying value of the asset may not be recoverable through future operations. Our annual review of goodwill impairment occurs in the fourth quarter.

We review goodwill for impairment utilizing either a qualitative assessment or a quantitative goodwill impairment test. If we choose to perform a qualitative assessment and we determine that the fair value of the reporting unit more likely than not exceeds the carrying value, no further evaluation is necessary. When we perform the quantitative goodwill impairment test, we determine fair value using accepted valuation techniques, which can include the market and discounted cash flow methods. The fair value of the reporting unit is compared to the carrying value, which includes goodwill. If the fair value of the reporting unit exceeds its carrying value, we do not consider the goodwill impaired. If the carrying value is higher than the fair value, we recognize the difference as an impairment loss, limited to the total amount of goodwill.

A quantitative goodwill impairment testing process requires valuation of the reporting unit. In the market approach, we can reference the Company's market capitalization as a value indication given the Company's single operating segment and reporting unit. In the income approach, which is based on a discounted forecasted cash flow including a terminal value, we compute the terminal value using the constant growth method, which values the forecasted cash flows in perpetuity. The assumptions about future cash flows and growth rates are based on the reporting unit's long-term forecast and is subject to review and approval by senior management. A reporting unit's discount rate is a significant assumption and is a risk-adjusted weighted average cost of capital, which we believe approximates the rate from a market participant's perspective. The estimated fair value could be impacted by changes in market conditions and various other assumptions, however we consider the discount rate assumption to be the key assumption. We categorize the fair value determination as Level 3 in the fair value hierarchy due to its use of internal projections and unobservable measurement inputs.

We identified a triggering event and recorded goodwill impairment of $29.5 million, the entirety of the goodwill carrying value, during the third quarter of 2023 (see Note 7).

Intangible Assets and Long-Lived Assets

Intangible assets consist of identifiable intangible assets acquired, specifically, developed technology, customer relationships, and trade names. The Company evaluates definite-lived intangible assets for impairment when events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable through future operations. If indicators of impairment are present, the Company then compares the estimated undiscounted cash flows that the specific asset is expected to generate to its carrying value. If such assets are impaired, the impairment recognized is measured as the amount by which the carrying amount of the asset exceeds its fair value. The Company experienced a triggering event during the third quarter of 2023 prompting impairment assessments of goodwill and long-lived assets, including definite-lived intangibles. The long-lived assets were determined to be recoverable, therefore the assessment did not result in an impairment of definite-lived intangible assets or other long-lived assets.

Capitalized Software

The Company capitalizes qualifying software development costs, primarily related to its cloud platform. The costs consist of personnel costs that are incurred during the application development stage. Capitalization of costs begins when two criteria are met: (1) the preliminary project stage is completed, and (2) it is probable that the software will be completed and used for its intended function. Capitalization ceases when the software is substantially complete and ready for its intended use, including the completion of all significant testing. Costs related to preliminary project activities and post-implementation operating activities are expensed as incurred. The capitalized costs are amortized on a straight-line basis over the estimated useful life of the asset, which is typically 3 years.

As of December 31, 2024 and 2023, capitalized software costs were $1.3 million, respectively, and included in other long-term assets on the balance sheet. Costs related to preliminary project activities and post-implementation operating activities are expensed as incurred. The capitalized costs are amortized on a straight-line basis over the estimated useful life of the asset, which is typically 3 years. For the years ended December 31, 2024 and 2023, amortization expense for capitalized software recorded to cost of revenue was $0.2 million and $0.1 million, respectively. For the years ended December 31, 2024 and 2023, accumulated amortization for capitalized software was $0.3 million and $0.1 million, respectively.

Foreign Currency Translation

The assets and liabilities of our subsidiary, Markforged Sweden AB, are translated from its functional currency (Swedish Krona) to U.S. dollars at the exchange rate in effect at the end of the period, and the consolidated statements of operations are translated at the average exchange rate each month.

Transactions in foreign currencies are recorded at the approximate rate of exchange at the transaction date. All such differences are recorded in Other expense, net in the consolidated statements of operations. Assets and liabilities resulting from these transactions are translated at the rate of exchange in effect at the balance sheet date. Differences are recorded in other comprehensive income (loss).

Comprehensive Loss

The Company follows the requirements of ASC 220, *Income Statement - Reporting Comprehensive Income,* for the reporting and presentation of comprehensive income (loss) and its components. The guidance requires unrealized gains or losses on the Company's foreign currency translation adjustments to be included in other comprehensive loss. Realized gains and losses and declines in the value of investment securities attributable to actual or expected losses are included in other expense, net in the consolidated statements of operations.

Recently Adopted Accounting Pronouncements

In June 2016, the FASB issued ASU 2016-13, Financial Instruments — Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments (“ASU 2016-13”), which requires immediate recognition of expected credit losses for financial assets carried at amortized cost, including trade and other receivables, loans and commitments, held-to-maturity debt securities and other financial assets, held at the reporting date to be measured based on historical experience, current conditions and reasonable supportable forecasts. The new credit loss model does not have a minimum threshold for recognition of impairment losses and entities will need to measure expected credit losses on assets that have a low risk of loss. These changes became effective for the Company on January 1, 2023, which did not have a material effect on the Company’s consolidated financial statements.

In November 2023, the FASB issued ASU 2023-07, Segment Reporting (Topic 280) Improvements to Reportable Segment Disclosures, which requires disclosure of incremental segment information on an interim and annual basis. ASU 2023-07 is effective for annual periods beginning after December 15, 2023, and interim periods within annual periods beginning after December 15, 2024, and requires retrospective adoption to all prior periods presented in the consolidated financial statements. These changes became effective for the Company on January 1, 2024, which did not have a material effect on the Company's consolidated financial statements.

Recently Issued Accounting Pronouncements Not Yet Adopted

In December 2023, the FASB issued ASU 2023-09, Income Taxes (Topic 740) Improvements to Income Tax Disclosures, which prescribes standard categories for the components of the effective tax rate reconciliation and requires disclosure of additional information for reconciling items meeting certain quantitative thresholds, requires disclosure of disaggregated income taxes paid, and modifies certain other income tax-related disclosures. ASU 2023-09 is effective for annual periods beginning after December 15, 2024 and allows for adoption on a prospective basis, with a retrospective option. The Company is currently evaluating the potential impact of the adoption of ASU 2023-09 on its consolidated financial statements and related disclosures.

In November 2024, the Financial Accounting Standards Board (FASB) issued Accounting Standard Update (ASU) No. 2024-03, Income Statement – Reporting Comprehensive Income – Expense Disaggregation Disclosures (Subtopic 220-40): Disaggregation of Income Statement Expenses. This ASU requires an entity to disclose the amounts of purchases of inventory, employee compensation, depreciation, and intangible asset amortization included in each relevant expense caption. It also requires an entity to include certain amounts that are already required to be disclosed under current GAAP in the same disclosure. Additionally, it requires an entity to disclose a qualitative description of the amounts remaining in relevant expense captions that are not separately disaggregated quantitatively, and to disclose the total amount of selling expenses and, in annual reporting periods, an entity’s definition of selling expenses. The amendments in the ASU are effective for annual reporting periods beginning after December 15, 2026 and interim reporting periods beginning after December 15, 2027, with early adoption permitted. An entity may apply the amendments prospectively for reporting periods after the effective date or retrospectively to any or all prior periods presented in the financial statements. While this ASU will impact only our disclosures and not our financial condition and results of operations, we are currently evaluating when we will adopt the ASU.

Note 3. Acquisitions

Teton Simulation Software (“Teton”)

On April 4, 2022, the Company acquired Teton Simulation Software (“Teton”) through a statutory merger in exchange for total consideration of $6.6 million, payable in a combination of cash and equity shares. Teton is a software company whose SmartSlice™ technology automates validation and optimizes part performance for additive manufacturing application. The Company integrated Teton's technology with its printing software solution, Eiger™, as a subscription add-on that offers manufacturing customers a streamlined workflow spanning part design, testing, optimization, validation and printing at the point of need, all on a single, cloud-based platform.

A portion of the acquisition consideration is contingent on achievement by Teton of certain business and development milestones, with a fair value of $1.6 million as of the date of acquisition. The Company will pay up to $1.5 million of business related contingent consideration based on stated sales or usage metrics, which had a fair value of $0.6 million as of the date of acquisition. The fair value of this milestone was determined to be $1.5 million as of December 31, 2023 and the milestone was determined to have been met as of March 31, 2024. The milestone was settled during the second quarter of 2024 by $0.75 million of cash and 108,614 shares. The development earnout related to product technical milestones, which had a fair value of $1.0 million as of the date of acquisition. This milestone was met and $0.75 million of cash and 31,249 shares were disbursed in 2022. Of the acquisition date cash and equity consideration indicated below, $0.25 million of the cash consideration and $0.25 million of the equity consideration was “held-back” and settled in the second quarter of 2023.

Markforged Sweden AB (“Markforged Sweden”)

On August 31, 2022 (the “Closing Date”), pursuant to a Sale and Purchase Agreement (the “Purchase Agreement”) by and between Markforged and Höganäs Aktiebolag, a limited liability company incorporated under the laws of Sweden (the “Seller”), the Company completed its acquisition of all of the outstanding share capital of Markforged Sweden AB, a limited liability company incorporated under the laws of Sweden (“Markforged Sweden”). At the closing, the Company issued 410,000 shares of Common Stock of the Company, and paid approximately $33.5 million in cash. The cash payment was comprised of $32.0 million related to the purchase price and $1.5 million to settle certain intercompany balances between the Seller and Markforged Sweden. The acquisition of Markforged Sweden, the creator of a precise and reliable binder jetting solution, extends Markforged's capabilities into high-throughput production of metal additive parts.

Note 4. Revenue

The Company derives revenue from the sale of 3D printers, consumable materials, and hardware maintenance agreements, through its global channel of third-party value-added reseller partners ("VARs"). Typically, the VAR is the Company's customer. Customers are invoiced at the time of shipment or at the beginning of the maintenance term and payment is typically due within 60 days. Contracts primarily contain fixed consideration although certain VAR contracts include performance rebates that may be earned based on sales targets which are accounted for as variable consideration and a reduction of revenue. The Company's variable consideration is primarily based on performance metrics measured over the fiscal year, thus uncertainties related to variable consideration are resolved as of December 31, 2024 and 2023.

Revenue associated with the Company's products are generally recognized when the customer obtains control of the Company's product, which occurs at a point in time, and may be upon shipment or upon delivery based on the contractual shipping terms of a contract. Revenue associated with hardware maintenance arrangements is recognized ratably over the term of the arrangements. For its premium cloud software subscription offering, the Company recognizes revenue ratably over time beginning on the date the customer is capable of accessing the software under "Services" in the revenue disaggregation table.

Significant Judgements

The Company enters into certain contracts that have multiple performance obligations. These performance obligations may include 3D printers, consumables, and premium cloud software subscription offerings. Contracts with more than one performance obligation require the Company to allocate the transaction price to each performance obligation. As the Company's contracts predominantly contain fixed consideration, the allocation of transaction price is based on a relative standalone selling price method. Certain products are not sold on a standalone basis or do not have a sufficient history of standalone sales and we are required to estimate the standalone selling price for the purposes of our allocation. We utilize market information, historical selling practices, and other available information to produce as accurate an estimate as possible.

Contract Balances

Timing of revenue recognition may differ from the timing of invoicing to customers. The Company has a right to bill when products are shipped, which is often the point in time revenue is recognized. As a result, the Company will have accounts receivable for billings and also deferred revenue for the portion of billings in advance of service in its hardware maintenance agreements.

The Company recognized $8.2 million of revenue in 2024 from deferred revenue as of December 31, 2023. The Company recognized $7.5 million of revenue in 2023 from deferred revenue as of December 31, 2022.

Deferred revenue is expected to be recognized when the Company provides hardware maintenance services or contractual performance obligations for which the customer has already provided payment with $9.1 million to be recognized in 2025, $3.1 million in 2026, $1.1 million in 2027, and $0.4 million thereafter.

Contract Costs

When costs to obtain a contract are incremental and the amortization period is greater than one year, the cost is capitalized and amortized over the period that aligns with the transfer of related goods and services. The amortization period does not extend beyond the initial contract term because there is not a sufficient history of renewals. When the costs to obtain a contract are capitalized for a contract that includes multiple performance obligations, the amortization pattern is consistent with the pattern of revenue recognition for the performance obligations.

The Company expenses sales commissions when incurred when the amortization period is one year or less. These costs are recorded within sales and marketing in the consolidated statement of operations.

Disaggregation of Revenue

The following table disaggregates the Company's revenue based on the nature of the products and services:

	Year Ended December 31,	
(in thousands)	**2024**	**2023**
Hardware	$ 49,103	$ 59,287
Consumables	23,394	23,996
Services	12,593	10,501
Total Revenue	$ 85,090	$ 93,784

Note 5. Property and Equipment, net

Property and equipment consist of the following:

(in thousands)	December 31, 2024	December 31, 2023
Machinery and equipment	$ 11,081	$ 11,249
Leasehold improvements	12,490	12,613
Computer equipment	3,516	3,481
Furniture and fixtures	302	438
Computer software	252	242
Construction in process	37	523
Property and equipment, gross	27,678	28,546
Less: Accumulated depreciation	(13,224)	(10,833)
Property and equipment, net	$ 14,454	$ 17,713

Depreciation expense for property and equipment was $4.3 million and $4.2 million for the years ended December 31, 2024 and 2023, respectively. Disposal of property and equipment amounted to $1.5 million of fully depreciated assets for the year ended December 31, 2024 and $0.8 million for the year ended December 31, 2023. Losses on disposals of fixed assets were $0.4 million for the year ended December 31, 2024.

Note 6. Inventory

Inventory consists of the following:

(in thousands)	December 31, 2024	December 31, 2023
Raw material	$ 2,766	$ 4,324
Work in process	1,627	555
Finished goods	17,969	21,894
Total inventory	$ 22,362	$ 26,773

The Company maintained a provision for excess and obsolete inventory of $3.1 million and $1.8 million as of December 31, 2024 and 2023, respectively. As of December 31, 2024, excess and obsolete inventory impairment related to finished goods is $2.6 million and $0.5 million is related to raw materials. As of December 31, 2023, excess and obsolete inventory impairment related to finished goods is $1.3 million and $0.5 million is related to raw materials. The impairment of excess and obsolete inventories is recorded within cost of revenue in the consolidated statements of operations.

Note 7. Goodwill and Intangible Assets

The following tables summarize the Company’s goodwill and intangible assets, all of which are related to the acquisitions of Teton Simulation Software in April 2022 and Markforged Sweden AB in August 2022 (in thousands):

(in thousands)	Goodwill
December 31, 2022	$ 31,116
Foreign currency translation	(1,649)
Goodwill impairment	(29,467)
December 31, 2023	$ —

In July 2021, Continuous Composites, a company based in Idaho, brought a claim in the United States District Court for the District of Delaware against the Company regarding patent infringement. On April 11, 2024, the jury returned a verdict against the Company in the amount of $17.3 million. The jury found one of the two patent claims Continuous Composites asserted at trial against the Company to be invalid and not infringed. However, the jury found that the Company had infringed the other patent claim and awarded monetary damages.

Following post-trial motions relating to the jury verdict, on September 20, 2024, the Company entered into the Settlement Agreement with Continuous Composites. The Settlement Agreement resolved all claims and counterclaims in the patent infringement litigation brought by Continuous Composites against the Company in the lawsuit. Under the terms of the Settlement Agreement, the Company made an initial upfront payment of $18 million to Continuous Composites, which payment was made on October 10, 2024, and is required to make three additional installment payments thereafter of $1 million, $2 million and $4 million in the fourth quarters of fiscal years 2025, 2026 and 2027, respectively. In consideration of such payments, the Settlement Agreement provides for a dismissal of all claims with prejudice, cross-licenses of the parties' respective patent portfolios, a mutual release of claims for liabilities arising prior to the effective date of the Settlement Agreement and mutual covenants not to sue. On October 11, 2024, the parties filed a Stipulation of Dismissal with the United States District Court for the District of Delaware, which was granted, and the case was terminated. The incremental amount due under the Settlement Agreement compared to the original verdict is determined to be representative of the amount attributable to the licensing of the patent rights contemplated under the Settlement Agreement and is recognized as an intangible asset of $5.5 million, after discount using a rate of 12%, to be amortized to cost of revenue over the life of the patents of 23 years. The future payments of $7.0 million under the Settlement Agreement are secured by the Security Agreement and as such the Company has recorded a long-term settlement payable on the consolidated balance sheet of $5.2 million which will accrete $1.8 million of interest over the payment term recognized as interest expense.

		December 31, 2024			December 31, 2023		
	Estimated Useful Life	**Gross Carrying Value**	**Accumulated Amortization**	**Net Book Value**	**Gross Carrying Value**	**Accumulated Amortization**	**Net Book Value**
Acquired technology	7 - 20 years	$ 16,800	$ (2,464)	$ 14,336	$ 16,800	$ (970)	$ 15,830
Customer relationships	9 years	560	(140)	420	560	(83)	477
Trade names	1 year	90	(90)	—	90	(90)	—
Licenses	23 years	5,457	(59)	5,398	—	—	—
Foreign currency translation		(640)	203	(437)	848	(27)	821
Intangible Assets, net		$ 22,267	$ (2,550)	$ 19,717	$ 18,298	$ (1,170)	$ 17,128

The Company recognized the following amortization expense to cost of revenue and operating expense during the years ended December 31, 2024 and 2023.

	Year Ended December 31,	
	2024	**2023**
Cost of revenue	$ 1,415	$ 877
Operating expenses	93	147
Total	$ 1,508	$ 1,024

Revenue is the basis for the economic pattern used to determine the amortization schedule of developed technology and customer relationships. Trade name intangible amortization is based on the term in which the Company anticipates using the asset. The estimated future amortization expense for amortizable assets to be recognized is as follows as of December 31, 2024 (in thousands):

2025	$ 2,171
2026	2,354
2027	2,110
2028	1,751
2029	1,400
Thereafter	9,931
Total	$ 19,717

Note 8. Accrued Expenses

The following table summarizes the Company's components of accrued expenses:

(in thousands)	December 31, 2024	December 31, 2023
Warranty reserve	$ 731	$ 886
Compensation, benefits, and expenses	3,306	4,213
Professional services	2,900	2,540
Marketing and advertising	119	325
Accrued taxes	196	252
Accrued freight and duties	947	594
Purchase commitment	-	700
Other	424	330
Total accrued expense	$ 8,623	$ 9,840

Note 9. Common Stock and Stockholders' Equity

Common Stock Reserved for Future Issuance

The Company has reserved the following shares of common stock for future issuance:

	December 31, 2024	December 31, 2023
Common stock options outstanding and unvested RSU	2,548,740	2,619,944
Shares available for issuance under the 2021 plan	3,207,304	2,702,849
Common stock warrants outstanding	852,500	852,500
Shares available for issuance as Earnout RSU	140,000	140,000
Employee stock purchase plan	1,049,136	850,553
Total shares of authorized common stock reserved for future issuance	7,797,680	7,165,846

Note 10. Equity Based Awards

On July 13, 2021, the Company's stockholders approved the Markforged Holding Corporation 2021 Stock Option and Incentive Plan ("2021 Plan") and the Markforged Holding Corporation 2021 Employee Stock Purchase Plan ("2021 ESPP"). As of December 31, 2024, 3,207,304 and 1,049,136 shares of common stock were available for issuance under the 2021 Plan and 2021 ESPP, respectively.

Under the 2021 Plan, the Company can grant stock options, stock appreciation rights, restricted stock awards, restricted stock units ("RSUs"), unrestricted stock awards, cash-based awards, and dividend equivalent rights. The 2021 Plan provides that an additional number of shares of common stock may be automatically added to the shares of common stock authorized for issuance under the 2021 Plan on January 1 of each year. The number of shares of common stock added each year may, at the discretion of the Board of Directors, be equal to (i) 5% of the number of shares of common stock issued and outstanding as of December 31 of the immediately preceding year or (ii) such lesser amount as determined by the Company's Board of Directors. The awards generally vest 25 percent after 12 months, followed by ratable vesting over 36 months. The options granted generally expire 10 years from the date of grant. The grant date fair value of options and RSUs is recognized as expense on a straight-line basis over the requisite service period, which is generally the vesting period.

The 2021 ESPP allows eligible employees to authorize payroll deductions between 1% and 15% of their base salary or wages, up to $25,000 annually, to be applied toward the purchase of shares of the Company's common stock occurring at offering periods determined by the Company. At each offering period, the eligible employees will have the option to acquire common stock at a discount of up to 15% of the lesser of the Company's common stock price on (i) the first trading day of the offering period or (ii) the last day of the offering period. The offering periods under the 2021 ESPP are not to exceed 27 months between periods. Under the terms of the Nano Merger Agreement, no offering period may commence under the 2021 ESPP unless the Nano Merger Agreement is terminated in accordance with its terms or the Nano Merger is not consummated. On January 1 of each subsequent year under the plan, the number of shares available for issuance under the plan may, at the discretion of the Board of Directors, be increased by the lesser of (i) 470,000 shares of common stock, (ii) one percent of the number of shares of common stock issued and outstanding as of

December 31 of the immediately preceding year, or (iii) number of shares of common stock determined by the Board of Directors. During the year ended December 31, 2024, the Company did not recognize stock compensation expense related to the 2021 ESPP as there were no grants under the 2021 ESPP.

Legacy Markforged's 2013 Stock Plan (the “2013 Plan”) was terminated at the Closing and all outstanding awards became outstanding under the 2021 Plan. No further awards will be granted under the 2013 Plan. Option activity under the 2021 Plan for the year ended December 31, 2024 is as follows:

	Number of Shares		Weighted-Average Exercise Price (Per Share)	Weighted-Average Remaining Contractual Life (in years)
Outstanding at December 31, 2023	1,088,845	$	20.71	6.13
Forfeited	(62,603)		15.72	
Outstanding at December 31, 2024	1,026,242	$	21.01	5.18
Options exercisable at December 31, 2024	1,026,160	$	21.01	5.18

The aggregate intrinsic value of stock options outstanding at December 31, 2024 was $3 thousand. As of December 31, 2024, the Company had 1,009,349 shares vested and expected to vest.

Additional information regarding the exercise of stock options is as follows:

	Year Ended December 31,			
(in thousands, except weighted average)		**2024**		**2023**
Intrinsic value of options exercised	$	-	$	501

In the years ended December 31, 2024 and 2023, the Company did not grant any options to purchase shares of Common Stock.

Restricted Stock Units

During the year ended December 31, 2024, the Company awarded RSUs to newly hired and continuing employees, as well as non-employee directors. The fair value per share of these awards was determined based on the fair market value of our stock on the date of the grant and is being recognized as stock-based compensation expense over the requisite service period. Awards containing market and/or performance conditions are recognized using the graded vesting method, which is an accelerated expense attribution method. We have not issued any awards with market and/or performance conditions since the Merger. The RSUs that vested during the year ended December 31, 2024 had a fair value of $3.4 million. The following table summarizes the RSU activity for the year ended December 31, 2024:

	Number of Shares		Weighted-Average Grant Date Fair Value (Per Share)
Outstanding at December 31, 2022	1,104,060	$	39.37
Granted	1,095,834		11.50
Vested	(396,586)		36.24
Forfeited	(272,208)		33.85
Outstanding at December 31, 2023	1,531,100	$	21.21
Granted	1,248,389		4.10
Vested	(610,099)		20.01
Forfeited	(646,892)		15.19
Unvested at December 31, 2024	1,522,498	$	10.22

Stock-Based Compensation Expense

The Company recorded compensation expense related to options and RSUs of $12.0 million and $14.0 million for the years ended December 31, 2024 and 2023. Total unrecognized stock-based compensation expense for the RSUs outstanding was $12.4

million at December 31, 2024, which is expected to be recognized over a weighted-average period of 1.7 years. There was no unrecognized stock-based compensation expense for the options outstanding at December 31, 2024.

	Year Ended December 31,	
(in thousands)	**2024**	**2023**
Stock options	$ 954	$ 2,641
Restricted stock units	11,079	11,398
Stock-based compensation expense for restricted stock units and options	$ 12,033	$ 14,039

Markforged Earnout Shares issuable to holders of Legacy Markforged equity interests as of the Merger closing date (“Eligible Markforged Equityholders”) with respect to a Legacy Markforged equity award are accounted for as equity classified stock compensation. Markforged Earnout Shares issuable with respect to a vested Legacy Markforged equity award do not have a requisite service period. To the extent that an Eligible Markforged Equityholder is entitled to receive Markforged Earnout RSUs with respect to an unvested Legacy Markforged equity award, the Earnout RSUs are subject to a service-based vesting condition with a vesting period equivalent to the remaining service period of the holder’s Legacy Markforged equity award as of Closing.

During the year ended December 31, 2024, the Company recognized de minimis stock-based compensation income related to the Markforged Earnout. The unrecognized compensation expense related to the Markforged Earnout is $35 thousand and will be recognized over a remaining period of no more than 0.25 years, dependent on when vesting conditions are met.

The stock-based compensation expense for stock-based awards and earnout shares was recognized in the following captions within the consolidated statements of operations:

	Year Ended December 31,	
(in thousands)	**2024**	**2023**
Cost of revenue	$ 137	$ 259
Sales and marketing	1,418	1,851
Research and development	3,216	4,649
General and administrative	7,204	7,228
Total stock-based compensation expense	$ 11,975	$ 13,987

Note 11. Earnout

During the five year period after the Closing (“Earnout Period”), Eligible Markforged Equityholders are entitled to receive up to 1,466,666 Markforged Earnout Shares upon the occurrence of certain triggering events. During the Earnout Period, the Sponsor’s 261,000 surrendered shares of common stock will be released from lock-up upon certain triggering events.

On the date when the volume-weighted average trading sale price (“VWAP”) of one share of the Common Stock quoted on the NYSE is greater than or equal to $125.00 for any twenty trading days within any thirty consecutive trading day period within the Earnout Period (“Triggering Event I”), the Eligible Markforged Equityholders will receive 800,000 Markforged Earnout Shares distributed on a pro-rata basis and 50% of the Sponsor’s surrendered shares will be released from lock-up to the Sponsor.

On the date when the VWAP of one share of the Company’s common stock quoted on the NYSE is greater than or equal to $150.00 for any twenty trading days within any thirty consecutive trading day period within the Earnout Period (“Triggering Event II” and together with Triggering Event I, each a "Triggering Event"), the Eligible Markforged Equityholders will receive the remaining 666,666 Markforged Earnout Shares distributed on a pro-rata basis and the remaining 50% of the Sponsor’s surrendered shares will be released from lock-up to the Sponsor.

There are two units of account within the Markforged Earnout Shares depending on whether the Eligible Markforged Equityholder is entitled to receive Markforged Earnout Shares with respect to a Legacy Markforged equity award, in which case the Markforged Earnout Shares are accounted for as equity classified stock compensation, or with respect to Legacy Markforged common stock, in which case the Markforged Earnout Shares are accounted for as a liability classified instrument in accordance with Accounting Standards Codification Topic 815-40. Markforged Earnout Shares issuable with respect to an unvested Legacy Markforged equity award are issued in the form of Earnout RSUs and are subject to forfeiture if the holder does not complete the required service period. Forfeited Markforged Earnout Shares are distributed to the remaining Eligible Markforged Equityholders on a pro-rata basis and are fungible between the two units of account. The following table summarizes the number of Earnout Shares allocated to each unit of account as of December 31, 2024:

	Triggering Event I Earnout Shares	Triggering Event II Earnout Shares
Derivative liability	732,997	610,831
Stock compensation	67,003	55,835
Total Earnout Shares	800,000	666,666

As of the Closing, the estimated value of the Markforged Earnout Shares and surrendered Sponsor shares was $80.40 per share issuable upon Triggering Event I and $76.60 per share issuable upon Triggering Event II. The estimated value of the Markforged Earnout Shares and surrendered Sponsor shares as of December 31, 2024 is $3.14 per share issuable upon Triggering Event I and $3.14 per share issuable upon Triggering Event II. The valuation of the Markforged Earnout Shares and surrendered Sponsor Earnout Shares was based on the closing price of the Common Stock as of December 31, 2024 as the triggering event of a change in control of the Company was determined to be probable as a result of the pending Nano Merger and reflected in the stock price. The valuation of the Markforged Earnout Shares and surrendered Sponsor Earnout Shares was based on a Monte Carlo simulation valuation model using a distribution of potential outcomes on a monthly basis over the Earnout period using the most reliable information available as of December 31, 2023. The following table describes the assumptions used in the valuation:

	December 31, 2023
Current stock price	$ 8.20
Expected volatility	85.00 %
Risk-free interest rate	4.07 %
Dividend rate	— %
Expected term (years)	2.54

None of the Earnout Triggering Events have occurred as of December 31, 2024 and therefore no earnout shares were distributed.

Note 12. Stock Warrants

Private Placement Warrants and Public Warrants

On September 26, 2024, the NYSE notified the Company that the NYSE had determined to delist the Public Warrants due to "abnormally low" trading price levels pursuant to Section 802.01D of the NYSE Listed Company Manual. The Company did not appeal the NYSE's determination and the Public Warrants were delisted from NYSE on January 6, 2025.

The Private Placement Warrants were initially recognized as a liability on July 14, 2021 at a fair value of $5.7 million. The Private Placement Warrants were remeasured to a value of nil as of December 31, 2024. The company recorded a gain of $0.1 million and a gain of $0.5 million during the years ended December 31, 2024 and December 31, 2023, respectively. The changes in fair value were included in change in fair value of derivative liabilities on the consolidated statements of operations.

The Company benchmarks the change in fair value of the Private Placement Warrants against the market price of the publicly traded warrants at each quarter end, the closing price which was nil as of December 31, 2024 and $0.06/warrant as of December 31, 2023.

The Public Warrants were recognized in stockholder’s equity at a fair value of $9.7 million on July 14, 2021.

Note 13. Income Taxes

The components of the Company’s profit (loss) before income taxes are as follows:

(in thousands)	Year Ended December 31, 2024	2023
Profit (loss) before income taxes:		
Domestic	(81,310)	(75,028)
Foreign	(5,499)	(29,125)
Total	$ (86,809)	$ (104,153)

The components of the income tax expense (benefit) are as follows:

(in thousands)	Year Ended December 31, 2024	2023
Current Provision		
Federal	$ —	$ —
State	—	—
Foreign	38	83
Total current expense (benefit)	$ 38	83
Deferred Provision		
Federal	—	—
State	—	—
Foreign	(1,281)	(669)
Total deferred expense (benefit)	(1,281)	(669)
Total income tax expense (benefit)	$ (1,243)	$ (586)

The income tax expense (benefit) primarily relates to acquired deferred tax liabilities serving as a source of income to support recognition of certain existing deferred tax assets as well as the benefit related to certain foreign losses.

The overall effective tax rate differs from the statutory US federal tax rate as follows:

	Year Ended December 31, % of Pretax Profit (Loss) 2024	2023
Statutory US federal tax rate	21.00%	21.00%
State income taxes, net of federal benefit	1.71	4.04
Stock-based compensation	(2.38)	(2.19)
Nondeductible expenses	(0.13)	(0.15)
Goodwill impairment	—	(6.06)
Fair market value change in warrants and earn out liabilities	(0.84)	—
Transaction costs	(1.20)	—
Officer's compensation	(0.19)	(0.13)
Research and development credits	(2.87)	2.56
Valuation allowance	(13.61)	(18.11)
Change in statutory tax rate	(0.05)	(0.04)
Other	—	(0.36)
Effective tax rate	1.44%	0.56%

Significant components of the Company's net deferred tax assets are as follows:

(in thousands)	December 31, 2024	2023
Deferred tax assets		
Lease liability	$ 7,938	$ 10,493
Capitalized research and development costs	11,719	14,596
Stock compensation	1,931	2,175
Reserves	1,106	689
Deferred revenue	667	1,298
Accrued expenses	672	564
Inventory reserves	637	670
Long term settlement payable	1,304	—
Net operating losses	62,760	42,646
Research and development credits	12,684	15,465
Other credits	459	407
Gross deferred tax assets	$ 101,877	$ 89,003
Less: Valuation allowance	(90,594)	(78,576)
Deferred tax liabilities		
Right-of-use assets	(7,432)	(8,966)
Deferred expenses	(132)	(125)
Acquired intangible assets	(2,814)	(3,218)
Other assets - license	(1,315)	—
Depreciation	(25)	(203)
Loss on sale of assets	(345)	(20)
Net deferred tax assets	$ (780)	$ (2,105)

As of December 31, 2024, the Company had federal net operating loss carryforwards of $15.0 million that are subject to expire at various dates between 2033 and 2037, and net operating losses of $236.2 million, that have no expiration date and can be carried forward indefinitely but are limited in their usage to 80% of annual taxable income. As of December 31, 2024, the Company had state tax net operating loss carryforwards of $128.7 million, that are subject to expire at various dates between 2026 and 2042. At December 31, 2024, the Company had federal and state research and development tax credit carryforwards of $8.5 million and $5.3 million, which begin to expire in 2033 and 2036, respectively.

As of December 31, 2024, the Company had foreign net operating loss carryforwards of $11.0 million. The total is comprised of $11.0 million of Sweden net operating losses, which have an unlimited carryforward period and do not expire.

The federal and state net operating loss and research and development credit carryforwards may be subject to a substantial annual limitation under Section 382 of the Internal Revenue Code of 1986, and similar state provisions, due to ownership change limitations that have occurred previously or that could occur in the future. These ownership changes may limit the amount of net operating loss and research and development credit carryforwards that can be utilized annually to offset future taxable income and tax, respectively. As of December 31, 2024, the Company has not completed a 382 study to assess whether a change of ownership has occurred since its formation.

Uncertain tax positions represent tax positions for which income tax reserves have been established. The Company's policy is to record interest and penalties related to uncertain tax positions as part of income tax expense. Reserves for uncertain tax positions as of December 31, 2024 are not material and would not impact the effective tax rate if recognized due to the valuation allowance maintained against the Company's net deferred tax assets.

The Company files tax returns as prescribed by the tax laws of the jurisdictions in which it operates. In the normal course of business the Company is subject to examination by federal, state and foreign jurisdictions, where applicable. There are currently no pending income tax examinations. The Company is open to federal tax examination under statute from 2020 to present. The Company is open to tax examination in other jurisdictions from 2017 to present. Carryforward attributes from prior years may still be adjusted upon examination by federal, state and/or foreign tax authorities to the extent utilized in an open tax year or in future periods.

As of December 31, 2024, the Company has not provided for deferred income taxes on unremitted earnings of its foreign subsidiaries since these earnings are indefinitely reinvested. Upon distribution of such earnings in the form of dividends or otherwise, the Company could be subject to taxes. The Company's foreign unremitted earnings are not material and, as such, any taxes attributable to such unremitted earnings would not be material.

The Company has evaluated the positive and negative evidence bearing upon the realizability of its deferred tax assets, which are primarily comprised of net operating losses and research and development credits. Management has determined that it is more likely than not that the Company will not recognize the benefits of its federal and state deferred tax assets and, as a result, a valuation allowance of $90.6 million has been established at December 31, 2024.

The following table presents the changes in the balance of the Company's deferred income tax asset valuation allowance:

(in thousands)	Year Ended December 31, 2024	Year Ended December 31, 2023
Balance at beginning of year	$ 78,576	$ 59,514
Additions charged to expense	12,018	19,062
Balance at end of year	$ 90,594	$ 78,576

Note 14. Leases

Rent expense under the Company's operating lease agreements was $6.5 million and $7.9 million for the years ended December 31, 2024 and 2023, respectively. There were no financing, variable, or short term leases during the years ended December 31, 2024 and 2023. The Company recorded a non-cash, pre-tax impairment of $4.0 million related to the operating lease right-of-use ("ROU") asset recorded for 480 Pleasant Street in the second quarter of 2023. See Note 2 for additional information on the impairment.

Future minimum lease payments under our operating leases are as follows as of December 31, 2024:

(in thousands)	Amount
2025	$ 5,467
2026	6,047
2027	6,191
2028	6,337
2029	6,334
After 2029	10,107
Total future lease payments	$ 40,483
Less: interest	(7,839)
Present value of lease liabilities	$ 32,644

	Year Ended December 31, 2024	Year Ended December 31, 2023
Supplemental cash flow information:		
Cash payments for operating leases included in cash flows used in operating activities	9,226	7,865

	December 31, 2024	December 31, 2023
Other lease information		
Weighted-average remaining lease term - Operating leases	6.6 years	7.1 years
Weighted-average discount rate - Operating leases	6.7 %	6.4 %

Note 15. Commitments and Contingencies

Minimum Commitment Arrangements

The Company may enter into non-binding purchase agreements with suppliers to acquire inventory and other materials during the normal course of business. The Company had three minimum non-cancelable purchase commitment arrangements during 2024. Two of these three arrangements have been fulfilled.

Legal Proceedings

From time to time, the Company may face legal claims or actions in the normal course of business. At each reporting date, the Company evaluates whether a potential loss amount or a potential range of loss is probable and reasonably estimable under the provisions of the authoritative guidance that address accounting for contingencies. The Company expenses as incurred the costs related to its legal proceedings.

In July 2021, Continuous Composites, a company based in Idaho, brought a claim in the United States District Court for the District of Delaware against the Company regarding patent infringement. On April 11, 2024, the jury returned a verdict against the Company in the amount of $17.3 million. The jury found one of the two patent claims Continuous Composites asserted at trial against the Company to be invalid and not infringed. However, the jury found that the Company had infringed the other patent claim and awarded monetary damages.

Following post-trial motions relating to the jury verdict, on September 20, 2024, the Company entered into the Settlement Agreement with Continuous Composites. The Settlement Agreement resolved all claims and counterclaims in the patent infringement litigation brought by Continuous Composites against the Company in the lawsuit. Under the terms of the Settlement Agreement, the Company made an initial upfront payment of $18 million to Continuous Composites, which payment was made on October 10, 2024, and is required to make three additional installment payments thereafter of $1 million, $2 million and $4 million in the fourth quarters of fiscal years 2025, 2026 and 2027, respectively. In consideration of such payments, the Settlement Agreement provides for a dismissal of all claims with prejudice, cross-licenses of the parties' respective patent portfolios, a mutual release of claims for liabilities arising prior to the effective date of the Settlement Agreement and mutual covenants not to sue. On October 11, 2024, the parties filed a Stipulation of Dismissal with the United States District Court for the District of Delaware, which was granted, and the case was terminated. The incremental amount due under the Settlement Agreement compared to the original verdict is determined to be representative of the amount attributable to the licensing of the patent rights contemplated under the Settlement Agreement and is recognized as an intangible asset of $5.5 million, after discount using a rate of 12%, to be amortized to cost of revenue over the life of the patents of 23 years. The future payments of $7.0 million under the Settlement Agreement are secured by the Security Agreement and as such the Company has recorded a long-term settlement payable on the consolidated balance sheet of $5.2 million which will accrete $1.8 million of interest over the payment term recognized as interest expense. Interest expense related to patent was $0.2 million for the year ended December 31, 2024.

Note 16. Net Profit (Loss) Per Share

The Company computes basic net profit (loss) per share using net profit (loss) attributable to the Company's common stockholders and the weighted-average number of common shares outstanding during each period. Diluted earnings per share include shares issuable upon exercise of outstanding stock options and stock-based awards where the conversion of such instruments would be dilutive. The Company does this through the treasury stock method.

	Year Ended December 31,	
(in thousands, except per share amounts)	**2024**	**2023**
Numerator:		
Net loss	$ (85,566)	$ (103,567)
Net loss attributable to common stockholders - Basic & Diluted	(85,566)	(103,567)
Denominator:		
Weighted average shares outstanding - Basic	20,252,793	19,689,601
Add: Weighted average unvested options outstanding	—	—
Add: Dilutive effect of restricted units issued	—	—
Weighted average shares outstanding - Diluted	20,252,793	19,689,601
Net loss per common share:		
Basic	$ (4.22)	$ (5.26)
Diluted	(4.22)	(5.26)

For the years ended December 31, 2024 and 2023, the Company was in a net loss position, thus the effect of potentially dilutive securities, including non-vested stock options, and warrants, was excluded from the denominator for the calculation of diluted net loss per share because the inclusion of such securities would be antidilutive. The following dilutive securities are excluded from the denominator:

	Year Ended December 31,	
	2024	2023
Unvested RSUs	1,587,890	1,307,521
Unvested or unexercised option awards	1,059,385	1,111,327
Warrants	852,498	852,498
Contingently issuable earnout shares	1,466,666	1,466,666
Total	4,966,438	4,738,012

Note 17. Segment Information

In the operation of the business, the Chief Executive Officer, who is the Company's chief operating decision maker, reviews the business as one operating and reportable segment. Operating segments are defined as components of an enterprise for which separate financial information is regularly reviewed by the CODM, which is the Company's Chief Executive Officer, in deciding how to allocate resources and assess performance. The CODM evaluates the Company's financial information and resources and assesses the performance of these resources on a consolidated basis. There is no expense or asset information, that are supplemental to those disclosed in these consolidated financial statements, that are regularly provided to the CODM. The allocation of resources and assessment of performance of the operating segment is based on consolidated net income as shown in our consolidated statement of operations. The CODM considers net income in the annual forecasting process and reviews actual results when making decisions about allocating resources. Since the Company operates as one operating segment, financial segment information, including profit or loss and asset information, can be found in the consolidated financial statements.

The Company currently sells its product in the Americas, Europe, Middle East and Africa ("EMEA"), and Asia Pacific ("APAC") markets. The Company measures revenue based on the physical location of where the customer who is receiving the promised goods or service is located.

Disaggregated revenue data for those markets is as follows:

	Year Ended December 31,	
(in thousands)	**2024**	**2023**
Americas	$ 41,295	$ 43,715
EMEA	25,378	29,744
APAC	18,417	20,325
Total	$ 85,090	$ 93,784

Revenue generated from customers within the Company's country of domicile, the United States, amounted to $36.5 million and $38.2 million for the years ended December 31, 2024 and 2023, respectively. The Company's long-lived assets are primarily located in the United States, where the Company's headquarters and primary operations are located. As of December 31, 2024 and 2023, approximately 13% and 17% of our long-lived assets are located in Sweden, where we perform research and development activities related to our binder-jetting technology, respectively.

Exhibit 4.3

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

The following description of the capital stock of Markforged Holding Corporation (the "Company", "we," "us," and "our") is a summary of certain provisions of the securities that are registered under Section 12 of the Securities and Exchange Act of 1934, as amended, and does not purport to be complete. It is subject to and qualified in its entirety by reference to our Certificate of Incorporation, as amended, and our Bylaws, each of which is incorporated by reference as an exhibit to the Annual Report on Form 10-K of which this Exhibit 4.3 is a part, and by the provisions of applicable law. We urge you to read the applicable provisions of Delaware law and our Certificate of Incorporation and Bylaws carefully and in their entirety for additional information.

General

Our authorized capital stock consists of One Hundred Million (100,000,000) shares of common stock, par value $0.0001 per share ("Common Stock"), and One Hundred Million (100,000,000) shares of undesignated preferred stock, par value $0.0001 per share ("Preferred Stock").

Common Stock

Holders of our Common Stock are entitled to one vote for each share held of record on all matters submitted to a vote of stockholders, including the election or removal of directors. The holders of our Common Stock do not have cumulative voting rights in the election of directors. Holders of our Common Stock are entitled to receive ratably any dividends declared by our board of directors out of funds legally available for that purpose, subject to any preferential dividend rights of any outstanding preferred stock. Our Common Stock has no preemptive rights, conversion rights or other subscription rights or redemption or sinking fund provisions. In the event of our liquidation, dissolution or winding up, holders of our Common Stock will be entitled to share ratably in all assets remaining after payment of all debts and other liabilities and any liquidation preference of any outstanding Preferred Stock.

Warrants

Public Shareholders' Warrants

Each whole warrant entitles the registered holder to purchase one share of our Common Stock at a price of $115.00 per share, subject to adjustment as discussed below, provided in each case that we have an effective registration statement under the Securities Act covering the shares of our Common Stock issuable upon exercise of the warrants and a current prospectus relating to them is available (or we permit holders to exercise their warrants on a cashless basis under the circumstances specified in the warrant agreement filed as Exhibit 4.1 the Annual Report on Form 10-K of which this Exhibit 4.3 is a part the "Warrant Agreement") and such shares are registered, qualified or exempt from registration under the securities, or blue sky, laws of the state of residence of the holder. Pursuant to the Warrant Agreement, a warrant holder may exercise its warrants only for a whole number of shares. This means only a whole warrant may be exercised at a given time by a warrant holder. No fractional warrants will be issued upon separation of the units and only whole warrants will trade. The warrants will expire on July 14, 2026, at 5:00 p.m., New York City time, or earlier upon redemption or liquidation. Our warrants were previously listed on the New York Stock Exchange ("NYSE") until the NYSE delisted such warrants on January 6, 2025.

The Company will not be obligated to deliver any shares of our Common Stock pursuant to the exercise of a warrant and will have no obligation to settle such warrant exercise unless a registration statement under the Securities Act with respect to the shares underlying the warrants is then effective and a prospectus relating thereto is current, subject to the Company satisfying its obligations described below with respect to registration, or a valid exemption from registration is available. No warrant will be exercisable and the Company will not be obligated to issue shares of our Common Stock upon exercise of a warrant unless the shares issuable upon such warrant exercise have been registered, qualified or deemed to be exempt under the securities laws of the state of residence of the registered holder of the warrants. In the event that the conditions in the two immediately preceding sentences are not satisfied with respect to a warrant, the holder of such warrant will not be entitled to exercise such warrant and such warrant may have no value and expire worthless. In no event will the Company be required to net cash settle any warrant. In the event that a registration statement is not effective for the exercised warrants, the purchaser of a unit containing such warrant will have paid the full purchase price for the unit solely for the share of our Common Stock underlying such unit. The Company registered shares of our Common Stock issuable upon exercise of the warrants on the registration statement filed on the Form S-1 filed with the U.S. Securities and Exchange Commission on August 13, 2021. Pursuant to the Warrant Agreement, the Company has agreed to use its commercially reasonable efforts to maintain the effectiveness of such registration statement and a current prospectus relating to those shares of our Common Stock until the warrants expire or are redeemed, as specified in the Warrant Agreement; provided that if such shares are at the time of any exercise of a warrant not listed on a national securities exchange such that they satisfy the definition of a "covered security" under Section 18(b)(1) of the Securities Act, the Company may, at its option, require holders of public warrants who exercise their warrants to do so on a "cashless basis" in accordance with Section 3(a)(9) of the Securities Act and, in the event the Company so elects, it will not be required to file or maintain in effect a registration statement.

Redemptions for warrants for cash when the price per share of our Common Stock equals or exceeds $180.00. Once the warrants become exercisable, we may call the public warrants for redemption:

• in whole and not in part;

• at a price of $0.10 per warrant;

• upon not less than 30 days' prior written notice of redemption to each warrant holder; and

• if, and only if, the closing price of the shares of our Common Stock equals or exceeds $180.00 per share (as adjusted for share sub-divisions, share capitalizations, reorganizations, recapitalizations and the like) for any 20 trading days within a 30-trading day period ending on the third trading day prior to the date on which notice of the redemption is given to the warrant holders.

We will not redeem the warrants as described above unless a registration statement under the Securities Act covering the issuance of shares of our Common Stock issuable upon exercise of the warrants is then effective and a current prospectus relating to those shares is available throughout the 30-day redemption period, except if the warrants may be exercised on a cashless basis and such cashless exercise is exempt from registration under the Securities Act. If and when the warrants become redeemable by us, we may exercise our redemption right even if we are unable to register or qualify the underlying securities for sale under all applicable state securities laws. As a result, we may redeem the warrants as set forth above even if the holders are otherwise unable to exercise the warrants.

We have established the last of the redemption criterion discussed above to prevent a redemption call unless there is at the time of the call a significant premium to the warrant exercise price. If the foregoing conditions are satisfied and we issue a notice of redemption of the warrants, each warrant holder will be entitled to exercise his, her or its warrant prior to the scheduled redemption date. However, the price of a share of our Common Stock may fall below the $180.00 redemption trigger price (as adjusted for share sub-divisions, share capitalizations, reorganizations, recapitalizations and the like) as well as the $115.00 (for whole shares) warrant exercise price after the redemption notice is issued.

Redemption of warrants for shares of our Common Stock when the price per share equals or exceeds $100.00. Commencing ninety days after the warrants become exercisable, we may redeem the outstanding warrants:

• in whole and not in part;

• at $1.00 per warrant upon a minimum of 30 days' prior written notice of redemption *provided* that during such 30 day period holders will be able to exercise their warrants on a cashless basis prior to redemption and receive that number of shares determined by reference to the table below, based on the redemption date and the "fair market value" of a share of our Common Stock (as defined below) except as otherwise described below provided, further, that if the warrants are not exercised on a cashless basis or otherwise during such 30 day period, we shall redeem such warrants for $1.00 per share;

• if, and only if, the closing price of shares of our Common Stock equals or exceeds $100.00 per public share (as adjusted for share subdivisions, share dividends, reorganizations, reclassifications, recapitalizations and the like) on the trading day before we send the notice of redemption to the warrant holders;

• if, and only if, the private placement warrants are also concurrently called for redemption on the same terms as the outstanding public warrants, as described above; and

• if, and only if, there is an effective registration statement covering the issuance of the shares of our Common Stock issuable upon exercise of the warrants and a current prospectus relating thereto available throughout the 30-day period after written notice of redemption is given.

Redemption Date				**Fair Market Value of Common Stock**					
(period to expiration of warrants)	**≤ $100.00**	**$110.00**	**$120.00**	**$130.00**	**$140.00**	**$150.00**	**$160.00**	**$170.00**	**≥ $180.00**
57 months	0.0257	0.0277	0.0294	0.0310	0.0324	0.0337	0.0348	0.0358	0.0365
54 months	0.0252	0.0272	0.0291	0.0307	0.0322	0.0335	0.0347	0.0357	0.0365
51 months	0.0246	0.0268	0.0287	0.0304	0.0320	0.0333	0.0346	0.0357	0.0365
48 months	0.0241	0.0263	0.0283	0.0301	0.0317	0.0332	0.0344	0.0356	0.0365
45 months	0.0235	0.0258	0.0279	0.0298	0.0315	0.0330	0.0343	0.0356	0.0365
42 months	0.0228	0.0252	0.0274	0.0294	0.0312	0.0328	0.0342	0.0355	0.0364
39 months	0.0221	0.0246	0.0269	0.0290	0.0309	0.0325	0.0340	0.0354	0.0364
36 months	0.0213	0.0239	0.0263	0.0285	0.0305	0.0323	0.0339	0.0353	0.0364
33 months	0.0205	0.0232	0.0257	0.0280	0.0301	0.0320	0.0337	0.0352	0.0364
30 months	0.0196	0.0224	0.0250	0.0274	0.0297	0.0316	0.0335	0.0351	0.0364
27 months	0.0185	0.0214	0.0242	0.0268	0.0291	0.0313	0.0332	0.0350	0.0364
24 months	0.0173	0.0204	0.0233	0.0260	0.0285	0.0308	0.0329	0.0348	0.0364
21 months	0.0161	0.0193	0.0223	0.0252	0.0279	0.0304	0.0326	0.0347	0.0364
18 months	0.0146	0.0179	0.0211	0.0242	0.0271	0.0298	0.0322	0.0345	0.0363
15 months	0.0130	0.0164	0.0197	0.0230	0.0262	0.0291	0.0317	0.0342	0.0363
12 months	0.0111	0.0146	0.0181	0.0216	0.0250	0.0282	0.0312	0.0339	0.0363
9 months	0.0090	0.0125	0.0162	0.0199	0.0237	0.0272	0.0305	0.0336	0.0362
6 months	0.0065	0.0099	0.0137	0.0178	0.0219	0.0259	0.0296	0.0331	0.0362

3 months	0.0034	0.0065	0.0104	0.0150	0.0197	0.0243	0.0286	0.0326	0.0361
0 months	-	-	0.0042	0.0115	0.0179	0.0233	0.0281	0.0323	0.0361

Beginning on the date the notice of redemption is given until the warrants are redeemed or exercised, holders may elect to exercise their warrants on a cashless basis. The numbers in the table above represent the number of shares of our Common Stock that a warrant holder will receive upon a cashless exercise in connection with a redemption by us pursuant to this redemption feature, based on the "fair market value" of our shares of our Common Stock on the corresponding redemption date (assuming holders elect to exercise their warrants and such warrants are not redeemed for $1.00 per warrant), determined based on volume weighted average price of such shares as reported during the 10 trading days ending on the third trading day prior to the date on which the notice of redemption is sent to the holders of warrants, and the number of months that the corresponding redemption date precedes the expiration date of the warrants, each as set forth in the table below.

The share prices set forth in the column headings of the table below will be adjusted as of any date on which the number of shares issuable upon exercise of a warrant is adjusted as set forth in the first three paragraphs under the heading *"- Anti-dilution Adjustments"* below. The adjusted share prices in the column headings will equal the share prices immediately prior to such adjustment, multiplied by a fraction, the numerator of which is the number of shares deliverable upon exercise of a warrant immediately prior to such adjustment and the denominator of which is the number of shares deliverable upon exercise of a warrant as so adjusted. The number of shares in the table below shall be adjusted in the same manner and at the same time as the number of shares issuable upon exercise of a warrant.

The exact fair market value and redemption date may not be set forth in the table above, in which case, if the fair market value is between two values in the table or the redemption date is between two redemption dates in the table, the number of shares of our Common Stock to be issued for each warrant exercised will be determined by a straight-line interpolation between the number of shares set forth for the higher and lower fair market values and the earlier and later redemption dates, as applicable, based on a 365 or 366-day year, as applicable. For example, if the volume-weighted average price of shares of our Common Stock as reported during the 10 trading days ending on the third trading day prior to the date on which the notice of redemption is sent to the holders of the warrants is $110.00 per share, and at such time there are 57 months until the expiration of the warrants, holders may choose to, in connection with this redemption feature, exercise their warrants for 0.0277 shares of our Common Stock for each whole warrant. For an example where the exact fair market value and redemption date are not as set forth in the table above, if the volume-weighted average price of shares of our Common Stock as reported during the 10 trading days ending on the third trading day prior to the date on which the notice of redemption is sent to the holders of the warrants is $135.00 per share, and at such time there are 38 months until the expiration of the warrants, holders may choose to, in connection with this redemption feature, exercise their warrants for 0.0298 shares of our Common Stock for each whole warrant. Finally, as reflected in the table above, if the warrants are out of the money and about to expire, they cannot be exercised on a cashless basis in connection with a redemption by us pursuant to this redemption feature, since they will not be exercisable for any shares of our Common Stock.

This redemption feature is structured to allow for all of the outstanding warrants to be redeemed when shares of our Common Stock are trading at or above $100.00, which may be at a time when the trading price of such shares is below the exercise price of the warrants. We have established this redemption feature to provide us with the flexibility to redeem the warrants without the warrants having to reach the $180.00 per share threshold set forth above. Holders choosing to exercise their warrants in connection with a redemption pursuant to this feature will, in effect, receive a number of shares for their warrants based on an option pricing model with a fixed volatility input as of the date of this proxy statement/prospectus. This redemption right provides us with an additional mechanism by which to redeem all of the outstanding warrants, and therefore have certainty as to our capital structure as the warrants would no longer be outstanding and would have been exercised or redeemed. We will be required to pay the applicable redemption price to warrant holders if we choose to exercise this redemption right and it will allow us to quickly proceed with a redemption of the warrants if we determine it is in our best interest to do so. As such, we would redeem the warrants in this manner when we believe it is in our best interest to update our capital structure to remove the warrants and pay the redemption price to the warrant holders.

As stated above, we can redeem the warrants when our Common Stock is trading at a price starting at $100.00 per share, which is below the exercise price of $115.00, because it will provide certainty with respect to our capital structure and cash position while providing warrant holders with the opportunity to exercise their warrants on a cashless basis for the applicable number of shares. If we choose to redeem the warrants when the our Common Stock is trading at a price below the exercise price of the warrants, this could result in the warrant holders receiving fewer shares than they would have received if they had chosen to wait to exercise their warrants if and when such our Common Stock was trading at a price higher than the exercise price of $115.00.

No fractional shares will be issued upon exercise. If, upon exercise, a holder would be entitled to receive a fractional interest in a share, we will round down to the nearest whole number of the shares of our Common Stock to be issued to the holder. If, at the time of redemption, the warrants are exercisable for a security other than shares of our Common Stock pursuant to the Warrant Agreement, the warrants may be exercised for such security. At such time as the warrants become exercisable for a security other than the our Common Stock, we (or the surviving company) will use its commercially reasonable efforts to register under the Securities Act the security issuable upon the exercise of the warrants.

Redemption procedures and cashless exercise. If we call the warrants for redemption when the price per share of our Common Stock equals or exceeds $180.00 as described above, we will have the option to require any holder that wishes to exercise his, her or its warrant to do so on a "cashless basis." In determining whether to require all holders to exercise their warrants on a "cashless basis," we will consider, among other factors, our cash position, the number of warrants that are outstanding and the dilutive effect on our shareholders of issuing the maximum number of shares issuable upon the exercise of our warrants. If this option is elected, all holders of warrants would pay the exercise price by surrendering their warrants for that number of shares of our Common Stock equal to the quotient obtained by dividing (x) the product of the number of shares of Common Stock underlying the warrants, multiplied by the excess of the "fair market value" (defined below) over the exercise price of the warrants by (y) the fair market value. The "fair market value" will mean the average closing price of our Common Stock for the 10 trading days ending on the third trading day prior to the date on which the notice of redemption is sent to the holders of warrants. In such event, the notice of redemption will contain the information necessary to calculate the number of shares to be received upon exercise of the warrants, including the "fair market value" in such case. Requiring a cashless exercise in this manner will reduce the number of shares to be issued and thereby lessen the dilutive effect of a warrant redemption. If the warrants are called for redemption and cashless exercise is not elected, the Sponsor and its permitted transferees would still be entitled to exercise their private placement warrants for cash or on a cashless basis using the same formula described above that other warrant holders would have been required to use had all warrant holders been required to exercise their warrants on a cashless basis, as described in more detail below.

A holder of a warrant may notify us in writing in the event it elects to be subject to a requirement that such holder will not have the right to exercise such warrant, to the extent that after giving effect to such exercise, such person (together with such person's affiliates), to the warrant agent's actual knowledge, would beneficially own in excess of 4.9% or

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9.8% (as specified by the holder) of our Common Stock issued and outstanding immediately after giving effect to such exercise.

Anti-dilution Adjustments. If the number of outstanding shares of our Common Stock is increased by a capitalization or share dividend payable in such shares, or by a sub-divisions of Common Stock or other similar event, then, on the effective date of such capitalization or share dividend, sub-divisions or similar event, the number of shares issuable on exercise of each warrant will be increased in proportion to such increase in the outstanding shares of our Common Stock. A rights offering made to all or substantially all holders of Common Stock entitling holders to purchase shares of our Common Stock at a price less than the “historical fair market value” (as defined below) will be deemed a share dividend of a number of shares equal to the product of (i) the number of shares of our Common Stock actually sold in such rights offering (or issuable under any other equity securities sold in such rights offering that are convertible into or exercisable for shares of our Common Stock) and (ii) one minus the quotient of (x) the price per share of our Common Stock paid in such rights offering and (y) the historical fair market value. For these

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purposes, (i) if the rights offering is for securities convertible into or exercisable for shares of our Common Stock, in determining the price payable for such shares, there will be taken into account any consideration received for such rights, as well as any additional amount payable upon exercise or conversion and (ii) “historical fair market value” means the volume-weighted average price of our Common Stock as reported during the 10 trading day period ending on the trading day prior to the first date on which the such shares trade on the applicable exchange or in the applicable market, regular way, without the right to receive such rights.

In addition, if we, at any time while the warrants are outstanding and unexpired, pay a dividend or make a distribution in cash, securities or other assets to all or substantially all the holders of shares of our Common Stock on account of such shares (or other securities into which the warrants are convertible), other than (a) as described above or (b) any cash dividends or cash distributions which, when combined on a per share basis with all other cash dividends and cash distributions paid on our Common Stock during the 365-day period ending on the date of declaration of such dividend or distribution does not exceed $5.00 (as adjusted to appropriately reflect any other adjustments and excluding cash dividends or cash distributions that resulted in an adjustment to the exercise price or to the number of shares of our Common Stock issuable on exercise of each warrant) but only with respect to the amount of the aggregate cash dividends or cash distributions equal to or less than $5.00 per share.

If the number of outstanding shares of our Common Stock is decreased by a consolidation, combination, reverse share sub-division or reclassification of such shares or other similar event, then, on the effective date of such consolidation, combination, reverse share sub-division, reclassification or similar event, the number of shares of our Common Stock issuable on exercise of each warrant will be decreased in proportion to such decrease in outstanding shares.

Whenever the number of shares of our Common Stock purchasable upon the exercise of the warrants is adjusted, as described above, the warrant exercise price will be adjusted by multiplying the warrant exercise price immediately prior to such adjustment by a fraction (x) the numerator of which will be the number of shares of our Common Stock purchasable upon the exercise of the warrants immediately prior to such adjustment and (y) the denominator of which will be the number of shares so purchasable immediately thereafter.

In case of any reclassification or reorganization of the outstanding shares of our Common Stock (other than those described above or that solely affects the par value of such shares), or in the case of any merger or consolidation of us with or into another corporation (other than a consolidation or merger in which we are the continuing corporation and that does not result in any reclassification or reorganization of our issued and outstanding shares of our Common Stock), or in the case of any sale or conveyance to another corporation or entity of the assets or other property of us as an entirety or substantially as an entirety in connection with which we are dissolved, the holders of the warrants

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will thereafter have the right to purchase and receive, upon the basis and upon the terms and conditions specified in the warrants and in lieu of the shares immediately theretofore purchasable and receivable upon the exercise of the rights represented thereby, the kind and amount of shares or other securities or property (including cash) receivable upon such reclassification, reorganization, merger or consolidation, or upon a dissolution following any such sale or transfer, that the holder of the warrants would have received if such holder had exercised their warrants immediately prior to such event. If less than 70% of the consideration receivable by the holders of shares of our Common Stock in such a transaction is payable in the form of shares in the successor entity that is listed for trading on a national securities exchange or is quoted in an established over-the-counter market, or is to be so listed for trading or quoted immediately following such event, and if the registered holder of the warrant properly exercises the warrant within thirty days following public disclosure of such transaction, the warrant exercise price will be reduced as specified in the warrant agreement based on the Black-Scholes value (as defined in the Warrant Agreement) of the warrant. The purpose of such exercise price reduction is to provide additional value to holders of the warrants when an extraordinary transaction occurs during the exercise period of the warrants pursuant to which the holders of the warrants otherwise do not receive the full potential value of the warrants.

The warrants have been issued in registered form under a Warrant Agreement between Continental Stock Transfer & Trust Company, as warrant agent, and us. The Warrant Agreement provides that the terms of the warrants may be amended without the consent of any holder to cure any ambiguity or correct any defective provision or correct any mistake, including to conform the provisions of the warrant agreement to the description of the terms of the warrants and the Warrant Agreement set forth in this proxy statement/prospectus, but requires the approval by the holders of at least 50% of the then outstanding public warrants to make any change that adversely affects the interests of the registered holders. Refer to the Warrant Agreement, a copy of which is filed as Exhibit 4.1 the Annual Report on Form 10-K of which this Exhibit 4.3 is a part, for a complete description of the terms and conditions applicable to the warrants.

The warrant holders do not have the rights or privileges of holders of Common Stock and any voting rights until they exercise their warrants and receive shares of our Common Stock. After the issuance of shares of our Common Stock upon exercise of the warrants, each holder will be entitled to one vote for each share held of record on all matters to be voted on by stockholders.

We have agreed that, subject to applicable law, any action, proceeding or claim against us arising out of or relating in any way to the Warrant Agreement will be brought and enforced in the courts of the State of New York or the United States District Court for the Southern District of New York, and the Company irrevocably submits to such jurisdiction, which jurisdiction will be the exclusive forum for any such action, proceeding or claim. This provision applies to claims under the Securities Act but does not apply to claims under the Exchange Act or any claim for which the federal district courts of the United States of America are the sole and exclusive forum.

Private Placement Warrants

The private placement warrants (including the our Common Stock issuable upon exercise of the private placement warrants) are not redeemable by us (except as described above under *"- Public Shareholders' Warrants - Redemption of warrants when the price per share of our Common Stock equals or exceeds $100.00"*) so long as they are held by A-star, a Cayman Islands limited liability company (the "Sponsor") or its permitted transferees. The Sponsor, or its permitted transferees, has the option to exercise the private placement warrants on a cashless basis and have certain registration rights described herein. If the private placement warrants are held by holders other than the Sponsor or its permitted transferees, the private placement warrants will be redeemable by us in all redemption scenarios and exercisable by the holders on the same basis as the public warrants.

Except as described under *"- Public Shareholders' Warrants - Redemption of warrants when the price per share of our Common Stock equals or exceeds $100.00",* if holders of the private placement warrants elect to exercise them on a cashless basis, they would pay the exercise price by surrendering his, her or its warrants for that number of shares of our Common Stock equal to the quotient obtained by dividing (x) the product of the number of shares of our Common Stock underlying the warrants, multiplied by the excess of the "historical fair market value" (defined below) less the exercise price of the warrants by (y) the historical fair market value. For these purposes, the "historical fair market value" shall mean the average last reported sale price of our Common Stock for the 10 trading days ending on the third trading day prior to the date on which the notice of warrant exercise is sent to the Warrant Agent.

Preferred Stock

Our board of directors has the authority, without further action by our stockholders, to issue up to 100,000,000 shares of Preferred Stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, sinking fund terms and the number of shares constituting, or the designation of, such series, any or all of which may be greater than the rights of Common Stock. The issuance of our Preferred Stock could adversely affect the voting power of holders of Common Stock and the likelihood that such holders will receive dividend payments and payments upon our liquidation. In addition, the issuance of Preferred Stock could have the

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effect of delaying, deferring or preventing a change in control of our company or other corporate action. No shares of Preferred Stock are outstanding, and we have no present plan to issue any shares of Preferred Stock.

Dividends

The DGCL permits a corporation to declare and pay dividends out of "surplus" or, if there is no "surplus", out of its net profits for the fiscal year in which the dividend is declared and/or the preceding fiscal year. "Surplus" is defined as the excess of the net assets of the corporation over the amount determined to be the capital of the corporation by the board of directors. The capital of the corporation is typically calculated to be (and cannot be less than) the aggregate par value of all issued shares of capital stock. Net assets equals the fair value of the total assets minus total liabilities. The DGCL also provides that dividends may not be paid out of net profits if, after the payment of the dividend, capital is less than the capital represented by the outstanding stock of all classes having a preference upon the distribution of assets.

Declaration and payment of any dividend is subject to the discretion of our board of directors. The time and amount of dividends is dependent upon our financial condition, operations, cash requirements and availability, debt repayment obligations, capital expenditure needs and restrictions in our debt instruments, industry trends, the provisions of Delaware law affecting the payment of distributions to stockholders and any other factors our board of directors may consider relevant. We have no current plans to pay dividends on our Common Stock. Any decision to declare and pay dividends in the future will be made at the sole discretion of our board of directors and will depend on, among other things, our results of operations, cash requirements, financial condition, contractual restrictions and other factors that our board of directors may deem relevant. Because we are a holding company and have no direct operations, we will only be able to pay dividends from funds we receive from our subsidiaries. In addition, our ability to pay dividends may be limited by the agreements governing indebtedness that we or our subsidiaries incur in the future.

Annual Stockholder Meetings

Our Bylaws provide that annual stockholder meetings will be held at a date, time and place, if any, as exclusively selected by our board of directors. To the extent permitted under applicable law, we may conduct meetings by remote communications, including by webcast.

Anti-Takeover Effects of the Certificate of Incorporation and Bylaws and Certain Provisions of Delaware Law

The Certificate of Incorporation and the Bylaws contain, and the DGCL contains provisions, which are summarized in the following paragraphs, that are intended to enhance the likelihood of continuity and stability in the composition of our board of directors. These provisions are intended to avoid costly takeover battles, reduce our vulnerability to a hostile change of control and enhance the ability of our board of directors to maximize stockholder value in connection with any unsolicited offer to acquire us. However, these provisions may have an anti-takeover effect and may delay, deter or prevent a merger or acquisition of Markforged Holding Corporation by means of a tender offer, a proxy contest or other takeover attempt that a stockholder might consider in its best interest, including those attempts that might result in a premium over the prevailing market price for the shares of our Common Stock held by stockholders.

Delaware Law

We are governed by the provisions of Section 203 of the DGCL. In general, Section 203 prohibits a public Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner. A “business combination” includes mergers, asset sales or other transactions resulting in a financial benefit to the stockholder. An “interested stockholder” is a person who, together

with affiliates and associates, owns 15% or more of the corporation’s outstanding voting stock. These provisions may have the effect of delaying, deferring or preventing a change in our control.

Authorized but Unissued Capital Stock

Delaware law does not require stockholder approval for any issuance of authorized shares, however the listing requirements of the NYSE apply if and so long as the our Common Stock remains listed on the NYSE. Additional shares that may be used in the future may be issued for a variety of corporate purposes, including future public offerings, to raise additional capital or to facilitate acquisitions.

Our board of directors may generally issue preferred shares on terms calculated to discourage, delay or prevent a change of control of Markforged Holding Corporation or the removal of our management. Moreover, our authorized but unissued shares of Preferred Stock will be available for future issuances without stockholder approval and could be utilized for a variety of corporate purposes, including future offerings to raise additional capital, to facilitate acquisitions and employee benefit plans.

One of the effects of the existence of unissued and unreserved Common Stock or Preferred Stock may be to enable our board of directors to issue shares to persons friendly to current management, which issuance could render more difficult or discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise, and thereby protect the continuity of our management and possibly deprive our stockholders of opportunities to sell their shares of our Common Stock at prices higher than prevailing market prices.

Classified Board of Directors

The Certificate of Incorporation provides that our board of directors will be divided into three classes of directors, with each director serving a three-year term. As a result, approximately one-third of our board of directors will be elected each year. The classification of directors has the effect of making it more difficult for stockholders to change the composition of our board of directors.

Removal of Directors; Vacancies

Under the DGCL, unless otherwise provided in our Certificate of Incorporation, a director serving on a classified board may be removed by the stockholders only for cause. The Certificate of Incorporation provides that directors may be removed for cause only by the affirmative vote of the holders of not less than two-thirds (2/3) of the outstanding shares of capital stock then entitled to vote at an election of directors, voting together as a single class, subject to the rights, if any, of any series of Preferred Stock to elect directors and to remove any director whom the holders of any such series have the right to elect. Further, at least forty-five (45) days prior to any annual or special meeting of stockholders at which it is proposed that any director be removed from office, written notice of such proposed removal and the alleged grounds thereof must be sent to the director whose removal will be considered at the meeting. In addition, the number of directors constituting the board of directors is permitted to be set only by a resolution adopted by a majority vote of our entire board of directors and only the board of directors, and not stockholders, may fill vacancies on the board of directors. These provisions prevent a stockholder from increasing the size of our board of directors and then gaining control of the board of directors by filling the resulting vacancies with its own nominees. This has the effect of making it more difficult to change the composition of our board of directors and promote continuity of management.

No Cumulative Voting

Under Delaware law, the right to vote cumulatively does not exist unless the charter specifically authorizes cumulative voting. The Certificate of Incorporation does not authorize cumulative voting.

Special Stockholder Meetings

Except as otherwise required by statute and subject to the rights, if any, of the holders of any series of Preferred Stock then outstanding, special meetings of our stockholders may be called only by the board of directors acting pursuant to a resolution approved by the affirmative vote of a majority of the directors then in office, and special meetings of stockholders may not be called by any other person or persons. Only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of our stockholders. These provisions might delay the ability of our stockholders to force consideration of a proposal or for stockholders controlling a majority of our capital stock to take any action, including the removal of directors.

Requirements for Advance Notification of Director Nominations and Stockholder Proposals

The Bylaws establish advance notice procedures with respect to stockholder proposals and the nomination of candidates for election as directors, other than nominations made by or at the direction of the board of directors. In order for any matter to be “properly brought” by a stockholder before a meeting, a stockholder will have to comply with advance notice requirements and provide us with certain information. Generally, to be timely, a stockholder’s notice relating to the nomination of a director to our board of directors or other business at an annual meeting must be received at our principal executive offices not less than 90 days nor more than 120 days prior to the first anniversary date of the immediately preceding annual meeting of stockholders. Our Bylaws also specify requirements as to the form and content of a stockholder’s notice. Stockholders may not bring nominations for the election of a director or other business before a special meeting of stockholders, unless such special meeting is to be held in lieu of an annual meeting of stockholders, in which case, the foregoing requirements for “timely notice” will apply. These provisions may also defer, delay or discourage a potential acquirer from conducting a solicitation of proxies to elect the acquirer’s own slate of directors or otherwise attempting to influence or obtain control of us.

Consent of Stockholders in Lieu of Meeting

Any action required or permitted to be taken by our stockholders at any annual or special meeting of stockholders must be effected at a duly called meeting of stockholders, and may not be taken or effected by a written consent of stockholders in lieu thereof.

Dissenters' Rights of Appraisal and Payment

Under the DGCL, with certain exceptions, our stockholders will have appraisal rights in connection with a merger or consolidation of Markforged Holding Corporation. Pursuant to the DGCL, stockholders who properly request and perfect appraisal rights in connection with such merger or consolidation will have the right to receive payment of the fair value of their shares as determined by the Delaware Court of Chancery.

Stockholders' Derivative Actions

Under the DGCL, any of our stockholders may bring an action in our name to procure a judgment in our favor, also known as a derivative action, provided that the stockholder bringing the action is a holder of our shares at the time of the transaction to which the action relates or such stockholder's stock thereafter devolved by operation of law.

Exclusive Forum Selection

Our Bylaws provide that, unless we consent in writing to an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for any state law claim for (1) any derivative action or proceeding brought on our behalf, (2) any action asserting a claim of breach of or based on a fiduciary duty owed by any of our current or former directors, officers, or employees to us or our stockholders, (3) any action asserting a claim arising pursuant to any provision of the DGCL, our Certificate of Incorporation or our Bylaws (including the interpretation, validity or enforceability thereof) or (4) any action asserting a claim that is governed by the internal affairs doctrine, in each case subject to the Court of Chancery having personal jurisdiction over the indispensable parties named as defendants therein, or the Delaware Forum Provision. The Delaware Forum

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Provision will not apply to any causes of action arising under the Securities Act or the Exchange Act. Our Bylaws further provide that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States shall be the sole and exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. In addition, our Bylaws provide that any person or entity purchasing or otherwise acquiring any interest in shares of our Common Stock is deemed to have notice of and consented to the foregoing provisions; provided, however, that stockholders cannot and will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder. This exclusive forum provision does not apply to suits brought to enforce any liability or duty created by the Exchange Act. The enforceability of similar choice of forum provisions in other companies' certificates of incorporation and bylaws has been challenged in legal proceedings, and it is possible that a court could find these types of provisions to be inapplicable or unenforceable.

Amendment of Bylaws

Our Bylaws may be amended or repealed by a majority vote of our board of directors or by the holders of at least two thirds (2/3) of the voting power of all of the then-outstanding shares entitled to vote generally in the election of directors, voting together as a single class.

Limitations on Liability and Indemnification of Officers and Directors

The DGCL authorizes corporations to limit or eliminate the personal liability of directors and officers of corporations and their stockholders for monetary damages for breaches of directors' fiduciary duties, subject to certain exceptions. Our Certificate of Incorporation includes provisions that eliminate the personal liability of directors and officers for monetary damages for any breach of fiduciary duty as a director or officer, except to the extent such exemption from liability or limitation thereof is not permitted under the DGCL. The effect of these provisions is to eliminate our rights and our stockholders' rights, through stockholders' derivative suits on our behalf, to recover monetary damages from a director or officer for breach of fiduciary duty as a director or officer, including breaches resulting from grossly negligent behavior. However, exculpation does not apply to any director or officer if the director or officer has acted in bad faith, knowingly or intentionally violated the law, authorized illegal dividends or redemptions or derived an improper benefit from his or her actions as a director or officer. Our Bylaws provide that we must indemnify and advance expenses to our directors and officers to the fullest extent authorized by the DGCL. We are also expressly authorized to carry directors' and officers' liability insurance providing indemnification for our directors, officers and certain employees for some liabilities. We believe that these indemnification and advancement provisions and insurance are useful to attract and retain qualified directors and executive officers.

The limitation of liability, advancement and indemnification provisions in our Certificate of Incorporation and Bylaws may discourage stockholders from bringing a lawsuit against directors or officers for breaches of their fiduciary duties. These provisions also may have the effect of reducing the likelihood of derivative litigation against directors and officers, even though such an action, if successful, might otherwise benefit us and our stockholders. In addition, your investment may be adversely affected to the extent we pay the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions.

There is currently no pending material litigation or proceeding involving any of Markforged's directors, officers or employees for which indemnification is sought.

Transfer Agent and Registrar

The transfer agent and registrar for our Common Stock is Continental Stock Transfer & Trust Company. The transfer agent and registrar's address is 1 State Street 30th Floor, New York, New York 10004.

Listing

Our Common Stock is listed on the NYSE under the symbol "MKFG".

Exhibit 19.1

MARKFORGED HOLDING CORPORATION INSIDER TRADING POLICY

This memorandum sets forth the policy of Markforged Holding Corporation and its subsidiaries (collectively, the "Company") regarding trading in the Company's securities as described below and the disclosure of information concerning the Company. This Insider Trading Policy (the "Insider Trading Policy") is designed to prevent insider trading or the appearance of impropriety, to satisfy the Company's obligation to reasonably supervise the activities of Company personnel, and to help Company personnel avoid the severe consequences associated with violations of insider trading laws. **It is your obligation to understand and comply with this Insider Trading Policy.**

PART I. OVERVIEW

•***To Whom does this Insider Trading Policy Apply?***

This Insider Trading Policy is applicable to the Company's directors, officers, employees and consultants and their respective "affiliates" (collectively, and solely for the purposes of this Insider Trading Policy, these persons are referred to as "Insiders") and applies to any and all transactions by such persons in the Company's securities, including its common stock, options to purchase common stock, any other type of securities that the Company may issue (such as preferred stock, convertible debentures, warrants, exchange-traded options or other derivative securities), and any derivative securities that provide the economic equivalent of ownership of any of the Company's securities or an opportunity, direct or indirect, to profit from any change in the value of the Company's securities.

In addition, certain specified Insiders (and their affiliated persons) set forth on **Schedule 1** (the "Designated Insiders") must comply with the Trading Procedures set forth in Part II of this Insider Trading Policy (the "Trading Procedures"). Generally, the Trading Procedures require the pre-clearance of all transactions in the Company's securities by Designated Insiders.

This Insider Trading Policy, including, if applicable, the Trading Procedures contained herein, also applies to the following persons (collectively, these persons and entities are referred to as "Affiliated Persons"):

oyour spouse, child, parent, significant other or other family member, in each case, living in the same household;

oall trusts, family partnerships and other types of entities formed for your benefit or for the benefit of a member of your family over which you have the ability to influence or direct investment decisions concerning securities;

oall persons who execute trades on your behalf; and oall investment funds, trusts, retirement plans, partnerships, corporations and other types of entities over which you have the ability to influence or direct investment decisions concerning securities; provided, however, that the Trading Procedures shall not apply to any such entity that engages in the investment of securities in the ordinary course of its business (e.g., an investment fund or partnership) if such entity has established its own insider trading controls and procedures in compliance with applicable securities laws and an Insider has hereby represented to the Company that such Insider's affiliated entities: (a) engage in the investment of securities in the ordinary course of their respective businesses; (b) have established insider trading controls and procedures in compliance with applicable securities laws; and (c) are aware such securities laws prohibit any person or entity who has material, nonpublic information concerning the Company from purchasing or selling securities of the Company or from communicating such information to any other person under circumstances in which it is reasonably foreseeable that such person is likely to purchase or sell securities.

You are responsible for ensuring compliance with this Insider Trading Policy, including the Trading Procedures contained herein, by all of your Affiliated Persons.

In the event that you leave the Company for any reason, this Insider Trading Policy, including, if applicable, the Trading Procedures contained herein, will continue to apply to you and your Affiliated Persons until the later of: (1) the second trading day following the public release of earnings for the fiscal quarter in which you leave the Company or (2) the second trading day after any material nonpublic information known to you has become public or is no longer material.

•***What is Prohibited by this Insider Trading Policy?***

It is generally illegal for you to trade in the securities of the Company, whether for your account or for the account of another, while in the possession of material, nonpublic information about the Company. It is also generally illegal for you to disclose material, nonpublic information about the Company to others who may trade on the basis of that information. These illegal activities are commonly referred to as "*insider trading*."

When you know or are in possession of material, nonpublic information about the Company, whether positive or negative, you are prohibited from the following activities:

otrading (whether for your account of for the account of another) in the Company's securities, which includes common stock, options to purchase common stock, any other type of securities that the Company may issue (such as preferred stock, convertible debentures, warrants, exchange-traded options or other derivative securities), and any derivative securities that provide the economic equivalent of ownership of any of the Company's securities or an opportunity, direct or indirect, to profit from any change in the value of the Company's securities, except for trades made in compliance with the affirmative defense of Rule 10b5-1 under the Exchange Act, such as when trades are made pursuant to a written plan that was adopted, or trading instructions that were given, before you knew or had possession of such material, nonpublic information and certain other conditions are satisfied;

ohaving others trade in the Company's securities for you;

ogiving trading advice of any kind about the Company; and

odisclosing the material, nonpublic information about the Company, whether positive or negative, to anyone else who might then trade, or recommending to anyone that they purchase or sell the Company's securities when you are aware of material, nonpublic information (these practices are commonly known as "*tipping*").

This Insider Trading Policy does not apply to: (1) an exercise of an employee stock option when payment of the exercise price is made in cash or (2) the withholding by the Company of shares of stock upon vesting of restricted stock or upon settlement of restricted stock units to satisfy applicable tax withholding requirements if (a) such withholding is required by the applicable plan or award agreement or (b) the election to exercise such tax withholding right was made by the Insider in compliance with the Trading Procedures.

The policy does apply, however, to: the use of outstanding Company securities to pay part or all of the exercise price of an option, any sale of stock as part of a broker- assisted cashless exercise of an option or any other market sale for the purpose of generating the cash needed to pay the exercise price of an option.

These prohibitions continue whenever and for as long as you know or are in possession of material, nonpublic information. Remember, anyone scrutinizing your transactions will be doing so after the fact, with the benefit of hindsight. As a practical matter, before engaging in any transaction, you should carefully consider how enforcement authorities and others might view the transaction in hindsight.

•***What is Material, Nonpublic Information?***

This Insider Trading Policy prohibits you from trading in the Company's securities if you are in possession of information about the Company that is both "*material*" and "*nonpublic*." If you have a question whether certain information you are aware of is material or has been made public, you are encouraged to consult with the Company's General Counsel (the "Compliance Officer").

"Material" Information

Information about the Company is "material" if it could reasonably be expected to affect the investment or voting decisions of a stockholder or investor, or if the disclosure of the information could reasonably be expected to significantly alter the total mix of information in the marketplace about the Company. In simple terms, material information is any type of information that could reasonably be expected to affect the market price of the Company's securities. Both positive and negative information may be material. While it is not possible to identify all information that would be deemed "material," the following items are types of information that should be considered carefully to determine whether they are material:

- oprojections of future earnings or losses, or other earnings guidance;
- oearnings or revenue that are inconsistent with the consensus expectations of the investment community;
- opotential restatements of the Company's financial statements, changes in auditors or auditor notification that the Company may no longer rely on an auditor's audit report;
- opending or proposed corporate mergers, acquisitions, tender offers, joint ventures or dispositions of significant assets;
- ochanges in management or the Board of Directors;
- osignificant actual or threatened litigation or governmental investigations or major developments in such matters;
- oa cybersecurity incident;
- osignificant developments regarding products, customers, suppliers, orders, contracts or financing sources (e.g., the acquisition or loss of a contract);
- ochanges in dividend policy, declarations of stock splits, or public or private sales of additional securities;
- opotential defaults under the Company's credit agreements or indentures, or the existence of material liquidity deficiencies; and
- obankruptcies or receiverships.

By including the list above, the Company does not mean to imply that each of these items above is per se material. The information and events on this list still require determinations as to their materiality (although some determinations will be reached more easily than others). For example, some new products or contracts may clearly be material to an issuer; yet that does not mean that all product developments or contracts will be material. This demonstrates, in our view, why no "bright-line" standard or list of items can adequately address the range of situations that may arise. Furthermore, the Company cannot create an exclusive list of events and information that have a higher probability of being considered material.

The Securities and Exchange Commission (the "SEC") has stated that there is no fixed quantitative threshold amount for determining materiality, and that even very small quantitative changes can be qualitatively material if they would result in a movement in the price of the Company's securities.

“Nonpublic” Information

Material information is “nonpublic” if it has not been disseminated in a manner making it available to investors generally. To show that information is public, it is necessary to point to some fact that establishes that the information has become publicly available, such as the filing of a report with the SEC, the distribution of a press release through a widely disseminated news or wire service, or by other means that are reasonably designed to provide broad public access.

Before a person who possesses material, nonpublic information can trade, there also must be adequate time for the market as a whole to absorb the information that has been disclosed. For the purposes of this Insider Trading Policy, information will be considered public after the close of trading on the second full trading day following the Company’s public release of the information.

For example, if the Company announces material nonpublic information of which you are aware before trading begins on a Tuesday, the first time you can buy or sell Company securities is the opening of the market on Thursday. However, if the Company announces this material information after trading begins on that Tuesday, the first time that you can buy or sell Company securities is the opening of the market on Friday.

•***What are the Penalties for Insider Trading and Noncompliance with this Insider Trading Policy?***

Both the SEC and the national securities exchanges, through the Financial Industry Regulatory Authority (“FINRA”), investigate and are very effective at detecting insider trading. The SEC, together with the U.S. Attorneys, pursue insider trading violations vigorously. For instance, cases have been successfully prosecuted against trading by employees in foreign accounts, trading by family members and friends, and trading involving only a small number of shares.

The penalties for violating insider trading or tipping rules can be severe and include:

odisgorgement of the profit gained or loss avoided by the trading;

opayment of the loss suffered by the persons who, contemporaneously with the purchase or sale of securities that are subject of such violation, have purchased or sold, as applicable, securities of the same class;

opayment of criminal penalties of up to $5,000,000;

opayment of civil penalties of up to three times the profit made or loss avoided; and

oimprisonment for up to 20 years.

The Company and/or the supervisors of the person engaged in insider trading may also be required to pay civil penalties of up to the greater of $2,166,279 (subject to periodic inflation adjustments) or three times the profit made or loss avoided, as well as criminal penalties of up to $25,000,000, and could under certain circumstances be subject to private lawsuits.

Violation of this Insider Trading Policy or any federal or state insider trading laws may subject the person violating such policy or laws to disciplinary action by the Company up to and including termination. The Company reserves the right to determine, in its own discretion and on the basis of the information available to it, whether this Insider Trading Policy has been violated. The Company may determine that specific conduct violates this Insider Trading Policy, whether or not the conduct also violates the law. It is not necessary for the Company to await the filing or conclusion of a civil or criminal action against the alleged violator before taking disciplinary action.

•How Do You Report a Violation of this Insider Trading Policy?

If you have a question about this Insider Trading Policy, including whether certain information you are aware of is material or has been made public, you are encouraged to consult with the Compliance Officer. In addition, if you violate this Insider Trading Policy or any federal or state laws governing insider trading, or know of any such violation by any director, officer or employee of the Company, you should report the violation immediately to the Compliance Officer. However if the conduct in question involves the Compliance Officer, or if you have reported such conduct to the Compliance Officer and you do not believe the Compliance Officer has dealt with it properly, or if you do not feel that you can discuss the matter with the Compliance Officer, you may raise the matter with the Chief Executive Officer.

PART II. TRADING PROCEDURES

*A.**Special Trading Restrictions Applicable to Insiders***

In addition to the restrictions on trading in Company securities set forth above, Insiders and their Affiliated Persons are subject to the following special trading restrictions:

No Trading During Quarterly Blackout Periods. The announcement of the Company’s quarterly financial results almost always has the potential to have a material effect on the market for the Company’s securities. Although an Insider may not know the financial results prior to public announcement, if an Insider engages in a trade before the financial results are disclosed to the public, such trades may give an appearance of impropriety that could subject the Insider and the Company to a charge of insider trading. Therefore, subject to limited exceptions described herein, Insiders may trade in Company securities only during four quarterly trading windows.
Unless otherwise advised, the four trading windows consist of the periods that begin after market close on the second full trading day following the Company’s issuance of a press release (or other method of broad public dissemination) announcing its quarterly or annual earnings (the “Earnings Announcement”) and end at the later of the close of business on (a) the 15th day before the end of the then-current quarter and (b) four business days following the Earnings Announcement”. Insiders may be allowed to trade outside of a trading window only (a) pursuant to a pre-approved Rule 10b5-1 Plan as described below or (b) in accordance with the procedure for waivers as described below.

•***No Trading During Special Blackout Windows***. There are times when the Company or certain members of its board of directors or senior management or support staff may be aware of a material, nonpublic development. Although an Insider may not know the specifics of such development, if an Insider engages in a trade before such development is disclosed to the public or resolved, such Insider and the Company might be exposed to a charge of insider trading that could be costly and difficult to refute. In addition, a trade by an Insider during such a period could result in adverse publicity for the Company. Therefore, Insiders may not trade in Company securities if they are notified by the Compliance Officer that the trading window is closed because of the existence of a material, nonpublic development. The Compliance Officer will subsequently notify the Insiders once the material, nonpublic development is disclosed to the public or resolved and that, as a result, the trading window is again open. While the Compliance Officer will undertake reasonable efforts to notify the Insiders that material, nonpublic events have developed, or are soon likely to develop, it is each Insider's individual duty to ensure that they do not make any trade in Company securities when material, nonpublic information exists, regardless of whether such Insider is aware of such development.

•***No Short Sales***. No Insider may at any time sell any securities of the Company that are not owned by such Insider at the time of the sale (a "short sale").

•***No Purchases or Sales of Derivative Securities or Hedging Transactions***. No Insider may buy or sell puts, calls, other derivative securities of the Company or any derivative securities that provide the economic equivalent of ownership of any of the Company's securities or an opportunity, direct or indirect, to profit from any change in the value of the Company's securities or engage in any other hedging transaction with respect to the Company's securities, at any time.

•***No Company Securities Subject to Margin Calls***. No Insider may use the Company's securities as collateral in a margin account.

•***No Pledges***. No Insider may pledge Company securities as collateral for a loan (or modify an existing pledge).

3.Gifts.

No Insider may give or make any other transfer of Company securities without consideration (e.g., a gift) during a period when the Insider is not permitted to trade unless the donee agrees not to sell the shares until such time as the Insider can sell.

4.No Trading During Retirement Plan Blackout Periods.

If the Company adopts a policy to allow ownership of Company stock in the Company's 401(k) or other retirement plan, then no Insider may trade in any Company securities, which were acquired in connection with such Insider's service or employment with the Company, during a retirement plan "blackout period" except as specifically permitted below. A blackout period includes any period of more than three (3) consecutive business days during which at least fifty percent (50%) of all participants and beneficiaries under all of the individual account plans maintained by the Company and members of its controlled group are prohibited from trading in Company securities through their plan accounts. Insiders will receive advance notice of any such blackout period from the Compliance Officer or his or her designee.

*B.**Designated Insiders; Pre-Clearance Procedures***

No Designated Insider may trade in Company securities unless the trade has been approved by the Compliance Officer in accordance with the procedures set forth below. The Compliance Officer will review and either approve or prohibit all proposed trades by Designated Insiders in accordance with the procedures set forth below. The Compliance Officer may consult with the Company's other officers and/or outside legal counsel and will receive approval for his own trades from the Chief Executive Officer or Chief Financial Officer.

•Procedures. No Designated Insider may trade in Company securities until:

•The Designated Insider has notified the Compliance Officer of the amount and nature of the proposed trade(s) using the Stock Transaction Request form attached to this Insider Trading Policy. In order to provide adequate time for the preparation of any required reports under Section 16 of the Exchange Act, a Stock Transaction Request form should, if practicable, be received by the Compliance Officer at least two (2) business days prior to the intended trade date;

•The Designated Insider has certified to the Compliance Officer in writing prior to the proposed trade(s) that the Designated Insider is not in possession of material, nonpublic information concerning the Company;

•The Designated Insider has informed the Compliance Officer, using the Stock Transaction Request form attached hereto, whether, to the Designated Insider's best knowledge, (a) the Designated Insider has (or is deemed to have) engaged in any opposite way transactions within the previous six months that were not exempt from Section 16(b) of the Exchange Act and (b) if the transaction involves a sale by an "affiliate" of the Company or of "restricted securities" (as such terms are defined under Rule 144 under the Securities Act of 1933, as amended ("Rule 144")), whether the transaction meets all of the applicable conditions of Rule 144; and

•The Compliance Officer or his or her designee has approved the trade(s) and has certified such approval in writing. Such certification may be made via digitally-signed electronic mail.

The Compliance Officer does not assume the responsibility for, and approval from the Compliance Officer does not protect the Designated Insider from, the consequences of prohibited insider trading.

•Additional Information.

Designated Insiders shall provide to the Compliance Officer any documentation reasonably requested by him or her in furtherance of the foregoing procedures. Any failure to provide such requested information will be grounds for denial of approval by the Compliance Officer.

•No Obligation to Approve Trades.

The existence of the foregoing approval procedures does not in any way obligate the Compliance Officer to approve any trade requested by a Designated Insider. The Compliance Officer may reject any trading request at his or her sole discretion.

From time to time, an event may occur that is material to the Company and is known by only a few directors or executives. Designated Insiders may not trade in Company securities if they are notified by the Compliance Officer that a proposed trade has not been cleared because of the existence of a material, nonpublic development. Even if that particular Designated Insider is not aware of the material, nonpublic development involving the Company, if any Designated Insider engages in a trade before a material, nonpublic development is disclosed to the public or resolved, the Designated Insider and the Company might be exposed to a charge of insider trading that could be costly and difficult to refute even if the Designated Insider was unaware of the development. So long as the event remains material and nonpublic, the Compliance Officer may determine not to approve any transactions in the Company's securities. The Compliance Officer will subsequently notify the Designated Insider once the material, nonpublic development is disclosed to the public or resolved. If a Designated Insider requests clearance to trade in the Company's securities during the pendency of such an event, the Compliance Officer may reject the trading request without disclosing the reason.

•Completion of Trades.

After receiving written clearance to engage in a trade signed by the Compliance Officer, a Designated Insider must complete the proposed trade within two (2) business days or make a new trading request.

•Post-Trade Reporting.

Any transactions in the Company's securities by a Designated Insider (including transactions effected pursuant to a Rule 10b5-1 Plan) must be reported to the Compliance Officer by completing the "Confirmation of Transaction" section of the Stock Transaction Request form attached to this Insider Trading Policy on the same day in which such a transaction occurs. Each report a Designated Insider makes to the Compliance Officer should include the date of the transaction, quantity of shares, price and broker-dealer through which the transaction was effected. This reporting requirement may be satisfied by sending (or having such Designated Insider's broker send) duplicate confirmations of trades to the Compliance Officer if such information is received by the Compliance Officer on or before the required date. Compliance by directors and executive officers with this provision is imperative given the requirement of Section 16 of the Exchange Act that these persons generally must report changes in ownership of Company securities within two (2) business days. The sanctions for noncompliance with this reporting deadline include mandatory disclosure in the Company's proxy statement for the next annual meeting of stockholders, as well as possible civil or criminal sanctions for chronic or egregious violators.

*C.**Exemptions***

•Pre-Approved Rule 10b5-1 Plan.

Transactions effected pursuant to a Rule 10b5-1 Plan (as defined below) will not be subject to the Company's special trading windows, retirement plan blackout periods or pre- clearance procedures, and Designated Insiders are not required to complete a Stock Transaction Request form for such transactions. Rule 10b5-1 of the Exchange Act provides an affirmative defense from insider trading liability under the federal securities laws for trading plans, arrangements or instructions that meet certain requirements. A trading plan, arrangement or instruction that meets the requirements of Rule 10b5-1 (a "Rule 10b5-1 Plan") enables Insiders to establish arrangements to trade in Company securities outside of the Company's trading windows, even when in possession of material, nonpublic information.

If an Insider intends to trade pursuant to a Rule 10b5-1 Plan, such plan, arrangement or instruction must:

•satisfy the requirements of Rule 10b5-1;

•be documented in writing;

•be established during a trading window when such Insider does not possess material, nonpublic information

•be pre-approved by the Compliance Officer.

Any deviation from, or alteration to, the specifications of an approved Rule 10b5-1 Plan (including, without limitation, the amount, price or timing of a purchase or sale) must be reported immediately to the Compliance Officer. Any transaction pursuant to a Rule 10b5-1 Plan must be timely reported following the transaction in accordance with the procedures set forth above.

The Compliance Officer may refuse to approve a Rule 10b5-1 Plan as he or she deems appropriate including, without limitation, if he or she determines that such plan does not satisfy the requirements of Rule 10b5-1.

Any modification of an Insider's prior Rule 10b5-1 Plan requires pre-approval by the Compliance Officer. A modification must occur during a trading window and while such Insider is not aware of material, nonpublic information.

•Employee Benefit Plans.

Exercise of Stock Options. The trading prohibitions and restrictions set forth in the Trading Procedures do not apply to the exercise of an option to purchase securities of the Company when payment of the exercise price is made in cash. However, the exercise of an option to purchase securities of the Company is subject to the current reporting requirements of Section 16 of the Exchange Act and, therefore, Insiders must comply with the post-trade reporting requirement described in Section C above for any such transaction. In addition, the securities acquired upon the exercise of an option to purchase Company securities are subject to all of the requirements of this Insider Trading Policy, including the Trading Procedures contained herein. Moreover, the Trading Procedures apply to the use of outstanding Company securities to pay part or all of the exercise price of an option, any net option exercise, any exercise of a stock appreciation right, share withholding, any sale of stock as part of a broker- assisted cashless exercise of an option, or any other market sale for the purpose of generating the cash needed to pay the exercise price of an option.

Tax Withholding on Restricted Stock/Units. The trading prohibitions and restrictions set forth in the Trading Procedures do not apply to the withholding by the Company of shares of stock upon vesting of restricted stock or upon settlement of restricted stock units to satisfy applicable tax withholding requirements if (a) such withholding is required by the applicable plan or award agreement or (b) the election to exercise such tax withholding right was made by the Insider in compliance with the Trading Procedures.

Employee Stock Purchase Plan. The trading prohibitions and restrictions set forth in the Trading Procedures do not apply to periodic wage withholding contributions by the Company or employees of the Company which are used to purchase the Company's securities pursuant to the employees' advance instructions under the Company's 2021 Employee Stock Purchase Plan.
However, no Insider may: (a) elect to participate in the plan or alter his or her instructions regarding the level of withholding or purchase by the Insider of Company securities under such plan; or (b) make cash contributions to such plan (other than through periodic wage withholding) without complying with the Trading Procedures. Any sale of securities acquired under such plan is subject to the prohibitions and restrictions of the Trading Procedures.

D. ***Waivers***

A waiver of any provision of this Insider Trading Policy, or the Trading Procedures contained herein, in a specific instance may be authorized in writing by the Compliance Officer or his or her designee, and any such waiver shall be reported to the Company's Board of Directors.

E.Insider Trading Policy Modifications

The Company may at any time change this Insider Trading Policy or adopt such other policies or procedures which it considers appropriate to carry out the purposes of its policies regarding insider trading and the disclosure of Company information. Notice of any such change will be delivered to you by regular or electronic mail (or other delivery option used by the Company) by the Company. You will be deemed to have received, be bound by and agree to revisions of this Insider Trading Policy when such revisions have been delivered to you, unless you object to any revision in a written statement received by the Compliance Officer within two (2) business days of such delivery**.**

PART III. ACKNOWLEDGEMENT

This Insider Trading Policy will be delivered to all current Insiders and to all directors, officers, employees and consultants at the start of their employment or relationship with the Company. Upon first receiving a copy of this Insider Trading Policy, each individual must acknowledge that he or she has received a copy and agrees to comply with the terms of this Insider Trading Policy, and, if applicable, the Trading Procedures contained herein. The acknowledgment attached hereto must be returned within ten (10) days of receipt to:

Assaf Zipori
Chief Financial Officer
Markforged Holding Corporation 60 Tower Road
Waltham, MA 02451

This acknowledgment will constitute consent for the Company to impose sanctions for violation of the Insider Trading Policy, including the Trading Procedures, and to issue any necessary stop-transfer orders to the Company's transfer agent to ensure compliance.

All directors, officers, employees and consultants will be required upon the Company's request to re-acknowledge and agree to comply with the Insider Trading Policy (including any amendments or modifications). For such purpose, an individual will be deemed to have acknowledged and agreed to comply with the Insider Trading Policy, as amended from time to time, when copies of such items have been delivered by regular or electronic mail (or other delivery option used by the Company) by the Compliance Officer or his or her designee.

* * *

Questions regarding this Insider Trading Policy are encouraged and may be directed to the Compliance Officer.

Adopted March 8, 2022.

Exhibit 21.1

Subsidiaries of Markforged Holding Corporation (Jurisdiction of Formation)

1.MarkForged, Inc. (Delaware)
2.Markforged Canada 3D Printing Inc. (Canada)
3.Markforged Ireland Services 3D Printing Limited (Ireland)
4.Markforged Japan 3D Printing K.K. (Japan)
5.MKFG Teton Simulation, LLC (Wyoming)
6.Markforged Sweden, A.B. (Sweden)
7.MKFG Israel (Israel)
8.MKFG Poland, sp. z.o.o (Poland)

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-3 (No. 333-267196) and Form S-8 (Nos. 333-259665, 333-264024, 333-270653, and 333-277999) of Markforged Holding Corporation of our report dated March 28, 2025 relating to the financial statements, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
Boston, Massachusetts
March 28, 2025

Exhibit 31.1

CERTIFICATION

I, Shai Terem, certify that:

1.I have reviewed this Annual Report on Form 10-K of Markforged Holding Corporation;

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:	March 28, 2025	By:	/s/ Shai Terem Shai Terem Chief Executive Officer (Principal Executive Officer)

Exhibit 31.2

CERTIFICATION

I, Assaf Zipori, certify that:

1.I have reviewed this Annual Report on Form 10-K of Markforged Holding Corporation;

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:	March 28, 2025	By:	/s/ Assaf Zipori
			Assaf Zipori Chief Financial Officer (Principal Financial and Accounting Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 10-K of Markforged Holding Corporation, Inc. (the "Company") for the period ended December 31, 2024 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Shai Terem, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

(1)The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2)The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 28, 2025

By: /s/Shai Terem
Shai Terem
Chief Executive Officer
(Principal Executive Officer)

This certification is being furnished pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 and shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that section. This certification will not be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934.

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 10-K of Markforged Holding Corporation, Inc. (the “Company”) for the period ended December 31, 2024 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Assaf Zipori, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

(1)The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2)The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 28, 2025	By:	/s/Assaf Zipori
		Assaf Zipori
		Chief Financial Officer
		(Principal Financial and Accounting Officer)

This certification is being furnished pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 and shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that section. This certification will not be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934.