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 fiscal year ended September 30, 2022

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from to .

Commission File Number: 0-25434

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

Delaware	**04-3040660**
(State or Other Jurisdiction of Incorporation or Organization)	*(I.R.S. Employer Identification No.)*
15 Elizabeth Drive **Chelmsford, Massachusetts**	**01824**
(Address of Principal Executive Offices)	*(Zip Code)*

978-262-2400
(Registrant's telephone number, including area code)

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

Title of Each Class	Trading Symbols	Name of Each Exchange on Which Registered
Common Stock, $0.01 par value	**AZTA**	**The Nasdaq Stock Market LLC**

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 Securities Exchange Act of 1934. 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, a 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. ☑

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

The aggregate market value of the registrant's Common Stock, $0.01 par value, held by non-affiliates of the registrant as of March 31, 2022, was approximately $6,114,187,970 based on the closing price per share of $82.88 on March 31, 2022 on the Nasdaq Stock Market. As of March 31, 2022, 74,983,621 shares of the registrant's Common Stock, $0.01 par value, were outstanding. As of November 14, 2022, 75,020,256 shares of the registrant's Common Stock, $0.01, par value, were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's Proxy Statement involving the election of directors, which is expected to be filed within 120 days after the end of the registrant's fiscal year, are incorporated by reference in Part III of this Report.

AZENTA, INC.

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Information Relating to Forward-Looking Statements

Certain statements in this Form 10-K constitute forward-looking statements, which are subject to the safe harbor provisions created by the Private Securities Litigation Reform Act of 1995. Certain, but not all, of the forward-looking statements in this Form 10-K are specifically identified as forward-looking, by use of phrases and words such as "we believe," "we estimate," "we expect," "may," "should," "could," "intend," "likely," and other future-oriented terms. The identification of certain statements as "forward-looking" is not intended to mean that other statements not specifically identified are not forward-looking. Forward-looking statements include, but are not limited to, statements that relate to our future revenue, margins, costs, earnings, profitability, product development, demand, acceptance and market share, competitiveness, market opportunities and performance, levels of research and development, or R&D, the success of our marketing, sales and service efforts, outsourced activities, operating expenses, anticipated manufacturing, customer and technical requirements, the ongoing viability of the solutions that we offer and our customers' success, tax expenses, our management's plans and objectives for current and future operations and business focus, the impact of the COVID-19 pandemic, the anticipated growth prospects of our business, the expected benefits and other statements relating to our divestures and acquisitions, our adoption of newly issued accounting guidance, the levels of customer spending, general economic conditions, the sufficiency of financial resources to support future operations, and capital expenditures. Such statements are based on current expectations and are subject to risks, uncertainties, and changes in condition, significance, value, and effect, including without limitation those discussed within Item 1A, "Risk Factors" and elsewhere in this Form 10-K and other documents we file from time to time with the Securities and Exchange Commission, or SEC, such as our quarterly reports on Form 10-Q and our current reports on Form 8-K. Such risks, uncertainties and changes in condition, significance, value and effect could cause our actual results, performance or achievements to differ materially from those expressed in this Form 10-K and in ways we cannot readily foresee. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof and are based on information currently and reasonably known to us. We do not undertake any obligation to release revisions to these forward-looking statements, to reflect events or circumstances that occur after the date of this Form 10-K or to reflect the occurrence or effect of anticipated or unanticipated events. Precautionary statements made herein should be read as being applicable to all related forward-looking statements wherever they appear in this report.

Unless the context indicates otherwise, references in this Form 10-K to "we", "us", "our" and other similar references mean Azenta, Inc. and its consolidated subsidiaries.

PART I

Item 1. *Business*

Overview

We are a leading global provider of life sciences sample exploration and management solutions for the life sciences market. We entered the life sciences market in 2011, leveraging our in-house capabilities of precision automation and cryogenics capabilities that we were then applying in the semiconductor market. These led us to provide solutions for automated ultra-cold storage. Since then, we have expanded our life sciences offerings both organically and through a series of acquisitions. We now support our customers from research to clinical development with our sample management, automated storage, and genomic services expertise to help our customers bring impactful therapies to market faster. We understand the importance of sample integrity and offer a broad portfolio of products and services supporting customers at every stage of the life cycle of samples, including procurement and sourcing, automated storage systems, genomic services and a multitude of sample consumables, informatics and data software, and sample repository solutions. Our expertise, global footprint, and leadership positions enable us to be a trusted global partner to pharmaceutical, biotechnology, and life sciences research institutions. In total, we employ approximately 3,200 full-time employees, part-time employees, and contingent workers worldwide and have sales in more than 100 countries. We are headquartered in Chelmsford, Massachusetts and have operations in North America, Asia, and Europe.

Our Company was founded in 1978 and became a leading automation provider and partner to the global semiconductor manufacturing industry. In the fourth quarter of fiscal year 2021, we entered into a definitive agreement

to sell our semiconductor automation business, to Thomas H. Lee Partners, L.P., or THL, and completed the sale on February 1, 2022 for $2.9 billion in cash. The semiconductor automation results are classified as discontinued operations, and, unless otherwise noted, the description of our business in this Form 10-K relates solely to our continuing operations.

In connection with the planned divesture of the semiconductor automation business and our continued focus on our life sciences businesses, we changed our corporate name from "Brooks Automation, Inc." to "Azenta, Inc." and our common stock started to trade on the Nasdaq Global Select Market under the symbol "AZTA" on December 1, 2021.

Our portfolio includes products and services offerings developed by us internally as well as many offerings we have added through multiple acquisitions designed to bring together a comprehensive capability to serve our customers' needs in the sample-based services arena. We continue to develop new products and services offerings and enhance existing and acquired offerings through the expertise of our research and development resources. We believe our acquisition, investment, and integration approach has allowed us to accelerate internal development and significantly accelerate time to market.

For further information on our acquisitions, please refer to Note 4, "Acquisitions" to our Consolidated Financial Statements included under Item 8, "Financial Statements and Supplementary Data" of this Form 10-K.

Life Sciences Market

Our businesses serve a broad range of end markets within the life sciences industry in the pursuit of a growing list of scientific possibilities for advancing the development of therapies to improve people's lives and cure diseases. With the advent of biologics and personalized medicine, biological samples have become critical assets to the success of drug and therapy pipelines, and the proper management and protection of these samples has gained increased importance to our customers. We believe this trend has created a sizable market opportunity for Azenta to provide comprehensive sample management and genomic solutions.

Since the successful mapping of the full human genome at the turn of this century, the market for genomic services has grown in support of research in biologic drug development, personalized medicine and cell/gene therapy. Top pharmaceutical and biotechnology companies can use their in-house laboratory resources to sequence the millions of genes needed as part of their research workflow. Still, many companies look to outsource their gene sequencing to independent laboratories that provide expedited results and expert consultative services. Other companies and institutions have fewer or no in-house options and make use of outsourced capabilities as their primary solution. We participate in this market as a value-added laboratory services provider, offering high quality genetic testing services with fast turnaround times.

We have more than 12,000 customers globally and believe we are well positioned to expand our customer base. We serve top pharmaceutical and biotechnology companies, the most advanced research hospitals performing clinical research and therapy development, as well as some of the newest and leading-edge start-ups in the biotech space. In addition, we also serve academic and government institutions. We believe that the sample-based services and products businesses will continue to demonstrate a growth trajectory and we do not observe cyclical demand for these offerings.

Segments

Our business is comprised of two reportable segments: Life Sciences Products and Life Sciences Services. For further information on our reportable and operating segments, please refer to Note 18, "Segment and Geographic Information" to our Consolidated Financial Statements included under Item 8, "Financial Statements and Supplementary Data" of this Form 10-K.

Life Sciences Products

Our Life Sciences Products business is a leading provider of automated cold storage solutions for biological and chemical compound samples. Our storage systems provide reliable automation and sample inventory management at temperatures down to -190°C and can store anywhere from one to millions of samples. Our sample management solutions include consumable vials and tubes, polymerase chain reaction, or PCR, plates, instruments for supporting

workflows, and informatics. This portfolio provides customers with the highest level of sample quality, security, availability, intelligence, and integrity throughout the lifecycle of samples providing customers with complete end-to-end "cold-chain of custody" capabilities. On July 1, 2022, we acquired Barkey Holding GmbH and its subsidiaries, or Barkey, a leading provider of controlled rate thawing devices for customers in the medical, biotech and pharmaceutical industries, headquartered in Leopoldshöhe, Germany.

Life Sciences Products Offerings

The principal offerings of the Life Sciences Products segment include the following:

Automated cold storage solutions – includes stand-alone systems that store over 20 million samples in temperature ranges from ambient to -80°C to cryogenic storage at -190°C. Our systems provide high throughput capability and optimized storage of multi-format tubes and plates while maintaining consistent temperature profiles across stored samples. We also offer a portfolio of service products designed to optimize productivity of our storage systems offerings.

Consumables and instruments - includes a complete range of consumables, including multiple formats of racks, tubes, caps, plates and foils, which are used for storage and handling of samples in ambient and ultra-cold storage environments. A comprehensive range of instruments used for labeling, bar coding, capping, de-capping, auditing, sealing, peeling, and piercing tubes and plates complement our consumables. Our offerings include a range of products aimed at the genomic sample preparation and services market for PCR and sequencing, imaging, plate sealing, liquid handling, and sample processing.

Controlled rate thawing devices – includes a range of products for automated thawing of plasma, blood and stem cells as well as on cell and gene therapy, or CGT, applications. Our products are used for controlled rate thawing of cryopreserved samples and therapies, and are used in R&D, clinical trials, good manufacturing practices and in the hospital setting. Our Barkey plasmatherm product is the only automated cell thawing device approved by the U.S. Food and Drug Administration, or FDA, as a medical device for use in patient care.

Life Sciences Services

Our Life Sciences Services business is a leading provider of solutions addressing the many needs of customers in the area of genomic analysis and the management and care of biological samples used in pharmaceutical, biotech, healthcare, clinical, and academic research, and development markets. We process millions of samples every year, each containing valuable information that must be preserved with the sample. Our genomic services provide a broad capability to customers for sequencing and synthesis of genes. Our sample management services include off-site storage services, transport services, laboratory services, and interactive informatics solutions. We also offer expert-level consultation services to our clients throughout their experimental design and implementation. Our services also include short- and long-term sample storage and management of the "cold chain of custody" from collection, to storage, to retrieving the sample which ultimately may go back into the research workflow.

Life Sciences Services Offerings

The principal offerings of the Life Sciences Services segment include the following:

Genomic Services - offers gene sequencing and gene synthesis services, enabling the fast-expanding research of gene-based healthcare discoveries and therapies. These service offerings include Next Generation sequencing, or NGS, Sanger sequencing, gene synthesis, bioinformatics, and good laboratory practices, or GLP, regulatory services. The sequencing services are available with both standard and custom services for extraction, library preparation, sequencing, and bioinformatics, supported by Ph.D.-level project managers providing consultations, updates, and post-delivery assistance. The gene synthesis offerings provide production of a wide range of sequence lengths and structural complexity, DNA cloning, gene fragment synthesis, oligo synthesis, and plasmid purification.

Sample Repository Solutions - includes a complete range of services consisting of on-site and off-site sample storage, cold chain logistics, sample transport and collection relocation, bio-processing solutions (inclusive of sample preparation, and genomic and cell culture analysis), disaster recovery and business continuity, biospecimen procurement services, as well as project management and consulting. Our Informatics solutions provides sample intelligence software

solutions, and support laboratory workflow scheduling for life science tools and instrument work cells, sample inventory and logistics, environmental and temperature monitoring, clinical trial and consent management, and planning, data management, virtualization, and visualization of sample collections. We offer enhanced on-site and off-site management of biological sample inventories and integration solutions to our customers for their increasingly distributed workflow.

We believe the combination of our broad sample-based offerings, including genomic analysis, sample management solutions, automated storage systems, informatic solutions and sample sourcing and procurement services has enabled us to better serve our customers with an integrated and comprehensive portfolio of services.

Acquisition completed after fiscal year end

On October 3, 2022, we acquired B Medical Systems S.á.r.l and its subsidiaries, or B Medical, a market leader in temperature-controlled storage and transportation solutions that enables the delivery of life-saving treatments to more than 150 countries worldwide. The acquisition complements our cold chain capabilities, adding differentiated solutions for reliable and traceable transport of temperature-sensitive specimens.

Sales, Marketing and Customer Support

Most of our sales are completed through our direct sales force, particularly our store systems, storage services, and genomic services. We supplement the sale of consumables and instruments with distributors that reach a broad range of customers. In regions with emerging life science industries such as China, India, and the Middle East, we leverage local distributors to assist with the sales process for automated stores. Our larger automated store systems sales process may take months to complete and involve a team from sales, marketing, and engineering. Sales of genomic services are generally generated with on-line orders from the customer laboratory and delivered via a courier service, with the simplest of sequencing requests completed in less than 24 hours and more complex synthesis tasks within weeks. We utilize a worldwide partner network of clinical sites and biobanks for the collection capability of our biospecimen procurement business.

We typically provide product warranties for a period of one to two years depending on the product type.

Our marketing activities include participation in trade shows, seminars, and industry forums, creation and distribution of sales literature, webinars, and white papers, and publication of press releases and articles in business and industry publications. We maintain sales and service centers in Asia, Europe, the Middle East, and North America to enhance support of and communication with customers.

Competition

Given the breadth of the sample management solutions and genomic services offered by our Life Sciences Products and Life Sciences Services segments, we believe we have a unique portfolio of products and services. Each of the business lines within the two segments, however, has unique competitors in their area of offerings. In the Life Sciences Products segment, our main competitors include Hamilton Company and Liconic AG for automation systems and Thermo Fisher Scientific for consumables and services. In the Life Sciences Services segment, our main competitors include Laboratory Corporation of America Holdings and Thermo Fisher Scientific Inc. for storage services, and BGI Genomics Co., Ltd., Eurofins, Scientific S.E., GenScript Biotech Corporation, Integrated DNA Technologies, Inc., Novogene Co., Ltd., and Twist Bioscience Corporation for genomic services.

Research and Development

Our research and development efforts are focused on developing new products and enhancing the functionality, degree of integration, reliability and performance of our existing products and service offerings. Our engineering, marketing, operations, and management personnel leverage their close collaborative relationships with their counterparts in customer organizations to proactively identify market demands that help us refocus our research and development investment to match our customers' demands.

Within our Life Sciences Products segment, we have developed and continue to develop automated biological sample storage solutions for operating in ultra-low temperature environments. We have a complete line up of automated

stores from ambient temperatures to -190°C. Our BioStore ™ has a unique design, which allows controlled temperature storage down to -80°C with the industry's highest throughput of sample retrieval. Our BioStore portfolio offers improved data management and sample security for vaccines and biologics stored at -80°C. Within our Life Sciences Services segment, our genomics services business advances research and development activities in gene sequencing, synthesis, editing, and related services to meet market demands. We invest in R&D services to develop protocols and efficiencies in our own laboratories and to provide proprietary offerings to our customers. As an example, in our genomic services business, we enriched our portfolio by adding regulated services targeting analysis of adeno-associated virus, a common vector used in cell and gene therapy. Furthermore, we continue to add value to drug discovery and development research by expanding our portfolio to include proteomics solutions. We will continue to focus on developing processes and technologies that can streamline sample to data workflows.

Manufacturing and Service

Our manufacturing operations include product assembly, integration, and testing. We implement quality assurance procedures that include standard design practices, reliability testing and analysis, supplier and component selection procedures, vendor controls, manufacturing process controls, and service processes that ensure high-quality performance of our products. Our major manufacturing facilities are in Manchester and Wotton, United Kingdom and Billerica, Massachusetts. Our manufacturing operations are designed to provide high quality, optimal cost, differentiated products to our customers in short lead times through responsive and flexible processes and sourcing strategies. We utilize lean manufacturing techniques for a large portion of our manufacturing.

We have service and support locations near our customers to provide rapid response to their service needs. Our principal product service and support locations include Chelmsford, Massachusetts, and Manchester, United Kingdom.

We provide sample management storage and transportation services in Indianapolis, Indiana; Griesheim, Germany; Montreal, Canada; Singapore; Beijing, China and various locations throughout the United States. We have a network of 14 laboratories that provide genomic services, including eight in the United States, three in China, and one each in Japan, Germany, and the United Kingdom.

Patents and Proprietary Rights

We rely on patents, trade secret laws, confidentiality procedures, copyrights, trademarks and licensing agreements to protect our technology. Due to the rapid technological change that characterizes the life sciences and related process equipment industries, we believe that the improvement of existing technology, reliance upon trade secrets, unpatented proprietary know-how, and the development of new products may be as important as patent protection in establishing and maintaining a competitive advantage. Our policy is to require all employees to enter into proprietary information and nondisclosure agreements to protect trade secrets and know-how. We cannot guarantee that these efforts will meaningfully protect our trade secrets.

As of September 30, 2022, we owned approximately 77 issued U.S. patents, with various corresponding patents issued in foreign jurisdictions. We also had approximately 33 pending U.S. patent applications, with foreign counterparts of some of these applications having been filed or which may be filed at the appropriate time. Our patents will expire at various dates through 2039.

Environmental Matters and Government Regulations

Environmental Regulations

We are subject to various laws and governmental regulations concerning environmental matters and employee safety and health in the United States and other countries. Federal environmental legislation in the United States that affects us includes the Resource Conservation and Recovery Act, the Clean Air Act, the Clean Water Act, the Safe Drinking Water Act, and the Comprehensive Environmental Response Compensation and Liability Act. We are also subject to regulation by the Occupational Safety and Health Administration, or OSHA, concerning employee safety and health matters. The United States Environmental Protection Agency, or EPA, OSHA, and other federal agencies have the authority to promulgate regulations that have an effect on our operations.

In addition to these federal laws and regulations, various states have been delegated certain authority under the federal statutes and have authority over these matters under state laws. Many state and local governments have adopted environmental and employee safety and health laws and regulations, some of which are similar to federal requirements.

Other Laws and Regulations

Our operations are also subject to other government regulations. While most of our products are not regulated, our recent acquisitions of Barkey and B Medical include certain products that are regulated by the FDA under the Federal Food, Drug, and Cosmetic Act.

Our businesses also include export and import activities, we are subject to pertinent laws enforced by the U.S. Departments of Commerce, State and Treasury. In addition, our logistics activities must comply with the rules and regulations of the Department of Transportation, the Federal Aviation Administration, and similar foreign agencies.

We believe we are in compliance in all material respects with all applicable environmental, employee health and safety and other government regulations, and such compliance has not had, and is not expected to have, an adverse effect on our capital expenditures, competitive position, financial condition, or results of operations.

Human Capital

As of September 30, 2022, we employed approximately 3,100 people which includes full-time and part-time employees. In addition, we utilized the services of 100 contingent associates, primarily in the United States. None of our employees are covered by collective bargaining agreements. We understand that our success depends on our highly talented associates, and our human capital management practices focus on attracting and retaining a diverse and engaged workforce.

Diversity, Equity and Inclusion. We are committed to attracting, developing, and retaining diverse talent that is inclusive of every age, gender, gender identity, race, sexual orientation, physical capability, neurological difference, ethnicity, belief and perspective. Our goal is to develop cultural competency by seeking knowledge, increasing awareness, developing sensitivity, modeling respect and promoting inclusion and unity. Approximately 48% of our employees are gender diverse, and 41% of our U.S.-based employees identify as being racially diverse. Additional detail on our gender and racial diversity can be found on our website in our environmental, social, and governance, or ESG, governance reports.

Employee Engagement. We are committed to fostering a culture and environment where every employee feels valued. Our success depends in large part on our hiring and retaining top talent across the entire organization, with primary emphasis on our management team and our employees who interface directly with our customers. We compete for talent with other companies both smaller and larger, and both in our market and in other industries.

Compensation and Benefits. In order to attract and retain top talent, we focus on having a diverse, inclusive, and safe workplace, while offering competitive compensation, benefits, and health and wellness programs. A majority of employees also have incentive compensation opportunities, which are primarily focused on meeting financial, sales, operational, and/or customer focused metrics. In addition, our long-term equity compensation is intended to align management interests with those of our stockholders and to encourage the creation of long-term value.

Training and Development. We provide training and learning opportunities, rotational assignment opportunities, and continuous performance feedback to further our employee development. Our learning culture is built on: formal curriculums, communities of practice, peer-to-peer learning, experiential development, support tools and ongoing assessment. We listen to our employees to better understand their training and development needs, and ensure our offerings cater to both technical learning and leadership development. We offer a generous tuition reimbursement program that encourages employees to pursue undergraduate and graduate degrees in fields associated with their current or aspirational positions. In 2022, 14 employees were enrolled in this benefit with 29% being female.

Employee Health and Safety. Compliance with environmental, health and safety, or EH&S, laws and regulations underlies the basis of the EH&S programs we have in place. As we continue to monitor the impact of the COVID-19 pandemic, we have implemented and will continue to implement measures to ensure the safety of our employees. We formed a COVID-19 leadership team, which is continuously evaluating the guidance from federal and local authorities and has created strict policies and guidelines that put our employee's health and safety first.

Purpose and Core Values. Our Company Purpose is to enable life sciences organizations around the world to bring impactful and breakthrough therapies to market – faster. We are committed to making sure that every team member understands our core values of Customer Focus, Achievement, Accountability, Teamwork, Employee Value, and Integrity. These core values are the foundation from which we act and base our decisions and are embodied in our Standards of Conduct, which outline our commitment to our customers, our investors, our communities, and to one another. Our Standards of Conduct also outline what is expected of our employees and ensure we continue to foster a culture of high integrity. We adhere to the governance requirements established by federal and state law, the Securities and Exchange Commission, or SEC, and the Nasdaq Global Select Market, and we strive to establish appropriate risk management methods and control procedures to adequately manage, monitor, and control the major risks we may face day to day.

Available Information

We file annual, quarterly, and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the internet at the SEC's website at http://www.sec.gov. We also maintain a website at www.azenta.com, through which you can access our SEC filings. The information found on our website is not part of this or any other report we file with or furnish to the SEC.

Item 1A. *Risk Factors*

Factors That May Affect Future Results

You should carefully consider the risks described below and the other information in this Form 10-K before deciding to invest in shares of our common stock. These are the risks and uncertainties applicable to our businesses that we believe are most important for you to consider. Additional risks and uncertainties not presently known to us, which we currently deem immaterial or which are similar to those faced by other companies in our industry or business in general, may also impair our business operations. If any of the following risks or uncertainties actually occur, our business, financial condition and operating results would likely suffer. In that event, the market price of our common stock could decline, and you could lose all or part of your investment.

Macroeconomic and External Risks

We are subject to risks associated with public health threats and epidemics, including COVID-19.

We are subject to risks associated with public health threats and epidemics, including the global health concerns relating to the ongoing COVID-19 pandemic. The global COVID-19 pandemic has adversely impacted and may further adversely impact our business and markets, including our workforce and operations and the operations of our customers, suppliers, and business partners. In particular, we may experience material financial or operational impacts, including:

- significant volatility or reductions in demand for our products and/or services; or
- the inability to meet our customers' needs or other obligations due to disruptions to our operations or the operations of our third-party partners, suppliers, contractors, logistics partners, or customers.

These impacts may be of greater magnitude in certain jurisdictions in which we and our customers operate that continue to maintain stringent COVID-19 policies, in particular China.

The depth and extent to which the COVID-19 pandemic may directly or indirectly impact our business, results of operations, financial condition and individual markets is dependent upon various factors, including the spread of additional variants, the availability of vaccinations, and government interventions to reduce the spread of the virus.

While we have developed and implemented and continue to develop and implement health and safety protocols, business continuity plans and crisis management protocols in an effort to try to mitigate the negative impact of COVID-19 on our employees and our business, there can be no assurance that we will be successful in our efforts or that such efforts may not have detrimental unintended consequences, and as a result, our business, financial condition and results of operations may be materially and adversely affected.

A prolonged downturn in macroeconomic conditions may materially adversely affect our business.

An economic downturn in the United States and elsewhere, including as a result of continued or future outbreaks of COVID-19 or a similar infectious disease, reductions in the level of government funding for scientific research, increases in interest rates, inflation, among other factors, may cause our current or potential customers to delay or reduce purchases, which could, in turn, result in reductions in sales of our products, materially and adversely affecting our results of operations and cash flows. Volatility and disruption of global financial markets could limit our customers' ability to obtain adequate financing to maintain operations and proceed with planned or new capital spending initiatives, leading to a reduction in sales volume that could materially and adversely affect our results of operations and cash flow. In addition, a decline in our customers' ability to pay as a result of the economic downturn may lead to increased difficulties in the collection of our accounts receivable, higher levels of reserves for doubtful accounts and write-offs of accounts receivable, and higher operating costs as a percentage of revenues.

Global climate change and related legal and regulatory developments could negatively affect our business, financial condition and results of operations.

Climate change presents risks to us and to our customers, with the risks expected to increase over time. Our products and services are subject to and affected by environmental regulation by federal, state, and local authorities in the United States and regulatory authorities with jurisdiction over our international operations. Future regulations or voluntary actions on our part in response to climate change could result in costly changes to our facilities to reduce carbon emissions and could increase energy costs as a result of switching to less carbon-intensive, but more expensive, sources of energy to operate our facilities and to transport and ship products and samples. There can be no assurance that climate change or environmental regulation and response will not have a negative competitive impact on our ability to provide sample management, automated storage, and genomic services or that economic returns will match the investment that we are making in the development of new products and services. We will likely face increasing complexity related to product design, the use of regulated materials, energy consumption and efficiency, and the reuse, recycling, or disposal of products and their components at end-of-use or useful life. There continues to be a lack of consistent climate legislation, which creates economic and regulatory uncertainty regarding future incentives for energy-efficiency and costs of compliance, which may impact the demand for our products and services, and our results of operations and financial condition. In addition, the potential physical impacts of climate change on our operations are highly uncertain and would be particular to the geographic circumstances in areas in which we operate. These may include changes in global weather patterns, which could include local changes in rainfall and storm patterns and intensities, water shortages, changing sea levels, and changing temperature averages or extremes. These impacts may also adversely affect our properties, our business, financial condition and results of operations.

Unfavorable currency exchange rate fluctuations may impact our significant foreign currency holdings, lead to lower operating margins, or may cause us to raise prices, which could result in reduced sales.

Currency exchange rate fluctuations could have an adverse effect on our sales, cost of sales and results of operations, and we could experience losses with respect to forward exchange contracts into which we may enter. Unfavorable currency fluctuations could require us to increase prices to customers, which could result in lower net sales by us to such customers. Alternatively, if we do not adjust the prices for our products and services in response to unfavorable currency fluctuations, our results of operations could be materially and adversely affected. In addition, most sales made by our foreign subsidiaries are denominated in the currency of the country in which these products are sold or these services are provided and the currency they receive in payment for such sales could be less valuable as compared

to the U.S. dollar at the time of receipt as a result of exchange rate fluctuations. From time to time, we enter into forward exchange contracts to reduce currency exposure. However, we cannot be certain that our efforts will be adequate to protect us against significant currency fluctuations or that such efforts will not expose us to additional exchange rate risks, which could materially and adversely affect our results of operations.

In addition, approximately $1 billion of the cash was received upon the completion of the sale of our semiconductor automation business on February 1, 2022, is denominated in Euro, which represents a substantial portion of our current cash balance. As a result of our increased foreign currency holdings, our financial results and capital ratios may be impacted by the movements in exchange rates, and a significant portion of our assets must be translated into U.S. dollars for external reporting purposes or converted into U.S. dollars to meet our strategic needs, including with respect to our recently approved share repurchase program, and service obligations such as any future U.S. dollar-denominated indebtedness or dividends. We may seek to mitigate our exposure to currency exchange rate fluctuations, but our efforts may not be successful.

Our business could be negatively impacted by environmental, social and governance (ESG) matters.

There has been an increased focus from investors, customers, employees and other stakeholders concerning environmental, social and governance, or ESG, matters, including addressing climate change, which may result in increases in our costs to operate our business or restrict certain aspects of our activities. The standards by which ESG efforts and related matters are measured are developing and evolving, and certain areas are subject to assumptions that could change over time and the extent and severity of climate change impacts are unknown. In addition, we could be criticized for the scope of such initiatives or goals or perceived as not acting responsibly in connection with these matters. Any such matters could have a material adverse impact on our future results of operations, financial position and cash flows.

Risks Relating to Our Operations

Our operating results could fluctuate significantly, which could negatively impact our business.

Our revenue, operating margins and other operating results could fluctuate significantly from quarter-to-quarter and year-to-year depending upon a variety of factors, including:

- changes in the timing and terms of product orders and service contracts by our customers as a result of our customer concentration or otherwise;
- changes in the demand for the mix of products and services that we offer;
- the timing and amount of any repurchases of our common stock under our recently approved share repurchase program;
- timing and market acceptance of our new product and services introductions;
- delays or problems in the planned introduction of new products or services, or in the performance of any such products following delivery to customers or the quality of such services;
- new products, services or technological innovations by our competitors, which can, among other things, render our products and services less competitive due to the rapid technological changes in the markets in which we provide products and services;
- the timing and related costs of any acquisitions, divestitures or other strategic transactions;
- our ability to reduce our costs in response to decreased demand for our products and services;
- our ability to accurately estimate customer demand, including the accuracy of demand forecasts used by us;
- disruptions in our manufacturing process or in the supply of components to us;

- write-offs for excess or obsolete inventory;
- competitive pricing pressures; and
- increased investment into our infrastructure to support our growth, including capital equipment, research and development, as well as selling and marketing initiatives to support continuous product and services innovation, technological capability enhancements and sales efforts. The timing of revenue generation coupled with the increased amount of investment may result in operating losses.

As a result of these risks, we believe that reference to past performance for comparisons of our revenue and operating results may not be meaningful, and that these comparisons may not be an accurate indicator of our future performance.

If we do not continue to introduce new products and services that reflect advances in technology in a timely and effective manner, our products and services may become obsolete and our operating results will suffer.

Our success is dependent on our ability to respond to the technological changes present in the markets we serve. The success of our product development and introduction of products and services to market depends on our ability to:

- identify and define new market opportunities, products and services in an accurate manner;
- obtain market acceptance of our products and services;
- innovate, develop, acquire and commercialize new technologies and applications in a timely manner;
- adjust to changing market conditions;
- differentiate our offerings from our competitors' offerings;
- obtain and maintain intellectual property rights where necessary;
- continue to develop a comprehensive, integrated product and service strategy;
- price our products and services appropriately; and
- design our products to high standards of manufacturability so that they meet customer requirements.

If we cannot succeed in responding in a timely manner to technological and/or market changes or if the new products and services that we introduce do not achieve market acceptance, our competitive position would diminish which could materially harm our business and our prospects.

The global nature of our business exposes us to multiple risks.

During fiscal years ended September 30, 2022, 2021 and 2020, approximately 33%, 38% and 34% of our revenue was derived from sales outside of North America. We expect that international sales, including increased sales in Asia, will continue to account for a significant portion of our revenue for the foreseeable future, and that in particular, the proportion of our sales to customers in China will continue to increase, due in large part to our significant genomic services operation in China. Additionally, we intend to invest additional resources in facilities in China, which will increase our global footprint of sales, service and repair operations. As a result of our international operations, we are exposed to many risks and uncertainties, including:

- longer sales-cycles and time to collection;
- tariff and international trade barriers;
- fewer or less certain legal protections for intellectual property and contract rights abroad;

- different and changing legal and regulatory requirements in the jurisdictions in which we operate;
- government currency control and restrictions on repatriation of earnings;
- a diverse workforce with different experience levels, languages, cultures, customs, business practices and worker expectations, and differing employment practices and labor issues;
- fluctuations in foreign currency exchange and interest rates, particularly in Asia and Europe; and
- political and economic instability, changes, hostilities and other disruptions in regions where we operate.

Negative developments in any of these areas in one or more countries could result in a reduction in demand for our products, the cancellation or delay of orders already placed, threats to our intellectual property, difficulty in collecting receivables, and a higher cost of doing business, any of which could materially harm our business and profitability.

In addition, approximately $1 billion of the proceeds from the recently completed sale of the semiconductor automation business is held outside the United States and our ability to repatriate any of the funds for use in the United States or elsewhere in our business may be limited, which could negatively impact our opportunities to deploy capital, including for our recently approved share repurchase program.

Our business could be materially harmed if we fail to adequately integrate the operations of the businesses that we have acquired or may acquire.

We have made in the past, and may make in the future, acquisitions or significant investments in businesses with complementary products, services and/or technologies. Our acquisitions, present numerous risks, including:

- difficulties in integrating the operations, technologies, products and personnel of the acquired companies and realizing the anticipated synergies of the combined businesses;
- defining and executing a comprehensive product strategy;
- managing the risks of entering markets or types of businesses in which we have limited or no direct experience;
- the potential loss of key employees, customers and strategic partners of ours or of acquired companies;
- unanticipated problems or latent liabilities, such as problems with the quality of the installed base of the target company’s products or infringement of another company’s intellectual property by a target company’s activities or products;
- problems associated with compliance with the acquired company’s existing contracts;
- difficulties in managing geographically dispersed operations; and
- the diversion of management’s attention from normal daily operations of the business.

If we acquire a new business, we may expend significant funds, incur additional debt or issue additional securities, which may negatively affect our operations and be dilutive to our stockholders. In periods following an acquisition, we will be required to evaluate goodwill and acquisition-related intangible assets for impairment. If such assets are found to be impaired, they will be written down to estimated fair value, with a charge against earnings. The failure to adequately address these risks or the impairment of any assets could materially harm our business and financial results.

Expanding within current markets introduces new competitors and commercial risks.

A key part of our growth strategy is to continue expanding within the life sciences sample management and genomic services markets. As part of this strategy, we expect to diversify our product sales and service revenue by leveraging our core technologies, which requires investments and resources which may not be available on favorable terms or at all when needed. We cannot guarantee that we will be successful in leveraging our capabilities into the life sciences sample management and genomic services markets to meet all the needs of new customers and to compete favorably. Because a significant portion of our growth potential may be dependent on our ability to increase sales within each of the Life Sciences Product and Life Sciences Services segments, our inability to successfully expand within the markets serviced by these segments may adversely impact future financial results.

Changes in key personnel could impair our ability to execute our business strategy.

The continuing service of our executive officers and essential engineering, scientific and management personnel, together with our ability to attract and retain such personnel, is an important factor in our continuing ability to execute our strategy. There is substantial competition to attract such employees and the loss of any such key employees could have a material adverse effect on our business and operating results. The same could be true if we were to experience a high turnover rate among engineering and scientific personnel and we were unable to replace them. Our ability to attract and retain employees may be negatively impacted by employees' reactions to our health and safety policies related to COVID-19 vaccinations, masks, and/or flexibility to work remotely, particularly in the United States. Any failure to attract, recruit, train, retain, motivate and integrate qualified personnel could materially harm our operating results and growth prospects.

Unexpected events could disrupt our sample storage operations and adversely affect our reputation and results of operations.

Unexpected events, including fires or explosions at our facilities, natural disasters, such as tornadoes, hurricanes and earthquakes, war or terrorist activities, unplanned power outages, supply disruptions and failure of equipment or systems, could adversely affect our reputation and results of operations. Our Life Sciences Services customers rely on us to securely store and timely retrieve and transport their critical samples, and these events could result in service disruptions, physical damage to one or more key storage facilities and the customer samples stored in those facilities, the temporary closure of one or more key operating facilities or the temporary disruption of service, each of which could negatively impact our reputation and results of operations. Our primary storage facility is located in Indianapolis, Indiana, an area of the United States that can be prone to tornadoes and other severe weather events.

If our facilities were to experience a significant disruption in operations, our business could be materially harmed, while the failure to estimate customer demand accurately could result in excess or obsolete inventory.

We have a limited number of manufacturing facilities for our products and laboratories for our service offerings. If the operations at any one of these facilities were disrupted as a result of a natural disaster, fire, power or other utility outage, work stoppage or other similar event, our business could be seriously harmed because we may be unable to manufacture and ship products and parts, or provide services, to our customers in a timely fashion. The impact of any disruption at one of our facilities may be exacerbated if the disruption occurs at a time when we need to rapidly increase our capabilities to meet increased demand or expedited shipment schedules.

Moreover, if actual demand for our products or services is different than expected, we may purchase more/fewer component parts or other supplies than necessary or incur costs for canceling, postponing or expediting delivery of such parts or supplies. If we purchase inventory in anticipation of customer demand that does not materialize, or if our customers reduce or delay orders, we may incur excess inventory charges. Any or all of these factors could materially and adversely affect our business, financial condition and results of operations.

Our business relies on certain critical information systems and a failure or breach of such a system could harm our business and results of operations and, in the event of unauthorized access to a customer's data or our data, incur significant legal and financial exposure and liabilities.

We maintain and rely upon certain critical information systems for the effective operation of our business. These information systems include telecommunications, the internet, our corporate intranet, various computer hardware and software applications, network communications and e-mail. These information systems may be owned and maintained by us, our outsource providers or third parties such as vendors and contractors. These information systems are subject to attacks, failures, and access denials from a number of potential sources including viruses, destructive or inadequate code, power failures, and physical damage to computers, hard drives, communication lines and networking equipment. To the extent that these information systems are under our control, we have implemented security procedures, such as virus protection software and emergency recovery processes, to mitigate the outlined risks. However, security procedures for information systems cannot be guaranteed to be failsafe and our inability to use or access these information systems at critical points in time, or unauthorized releases of confidential information, could unfavorably impact the timely and efficient operation of our business.

Confidential information stored on these information systems could also be compromised. If a third party gains unauthorized access to our data, including any information regarding our customers, such security breach could expose us to a risk of loss of this information, loss of business, litigation and possible liability. These security measures may be breached as a result of third-party action, including intentional misconduct by computer hackers, employee error, malfeasance or otherwise. Additionally, third parties may fraudulently attempt to induce employees or customers into disclosing sensitive information such as user names, passwords or other information in order to gain access to our customers' data or our data, including our intellectual property and other confidential business information, or our information technology systems. Because the techniques used to obtain unauthorized access, or to sabotage systems, change frequently and generally are not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures. Any security breach could result in a loss of confidence by our customers, damage our reputation, disrupt our business, lead to legal liability and negatively impact our future sales.

Our goodwill and intangible assets may become impaired.

As of September 30, 2022, we had $513.6 million of goodwill and $178.4 million in net intangible assets as a result of our acquisitions. We periodically review our goodwill and the estimated useful lives of our identifiable intangible assets, taking into consideration any events or circumstances that might result in either a diminished fair value, or for intangible assets, a revised useful life. These events and circumstances include significant changes in the business climate, legal factors, operating performance indicators, advances in technology and competition. Any impairment or revised useful life could have a material and adverse effect on our financial position and results of operations and could harm the trading price of our common stock.

Changes in tax rates or tax regulation could affect results of operations.

As a global company, we are subject to taxation in the United States and various other countries. Significant judgment is required to determine and estimate worldwide tax liabilities. Our future annual and quarterly effective tax rates could be affected by numerous factors, including changes in the following: applicable tax laws; composition of pre-tax income in countries with differing tax rates; and/or establishment of a valuation allowance against deferred tax assets based on the assessment of their realizability prior to expiration. Changes in applicable tax laws could significantly impact the estimates of our tax assets and liabilities, as well as expectations of future effective tax rates. In addition, we are subject to regular examination by the U.S. Internal Revenue Service and state, local and foreign tax authorities. We regularly assess the likelihood of favorable or unfavorable outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. Although we believe our tax estimates are reasonable, there can be no assurance that any final determination will not be materially different from the treatment reflected in our historical income tax provisions and accruals, which could materially and adversely affect our financial condition and results of operations.

International trade disputes could result in additional or increased tariffs, export controls or other trade restrictions that may have a material impact on our business.

We sell a significant number of products outside the United States, including in China and Japan. Based on the complex relationships among these countries and the United States, there is inherent risk that political, diplomatic and national security influences might lead to trade disputes, impacts and/or disruptions. The United States and other countries have imposed and may continue to impose trade restrictions and have also levied tariffs and taxes on certain goods. Increases in tariffs, additional taxes or other trade restrictions and retaliatory measures may increasingly impact customer demand and customer investment in manufacturing equipment, increase our manufacturing costs, decrease margins, reduce the competitiveness of our products, or inhibit our ability to sell products or purchase necessary equipment and supplies, which could have a material adverse effect on our business, results of operations, or financial condition.

We are subject to numerous governmental regulations.

We are subject to federal, state, local and foreign regulations, including environmental regulations, regulations relating to the design and operation of our products and control systems and regulations relating to certain of our service offerings, including those described above under "Business-Environmental Matters and Governance Regulations". We might incur significant costs as we seek to ensure that our products meet safety and emissions standards, many of which vary across the states and countries in which our products are used. In the past, we have invested significant resources to redesign our products to comply with these directives. Compliance with future regulations, directives, and standards could require us to modify or redesign some products, change our service offerings, make capital expenditures, or incur substantial costs. If we do not comply with current or future regulations, directives, and standards:

- we could be subject to fines;
- our production or shipments could be suspended; and
- we could be prohibited from offering particular products or services in specified markets.

Any of these events could materially and adversely affect our business, financial condition and results of operations.

Regulations and customer demands related to conflict minerals may adversely affect us.

The Dodd-Frank Wall Street Reform and Consumer Protection Act imposes disclosure requirements regarding the use in components of our products of "conflict minerals" mined from the Democratic Republic of Congo and adjoining countries, whether the components of our products are manufactured by us or third parties. This requirement could affect the pricing, sourcing and availability of minerals used in the manufacture of components we use in our products. In addition, there are additional costs associated with complying with the disclosure requirements and customer requests, such as costs related to our due diligence to determine the source of any conflict minerals used in our products. We may face difficulties in satisfying customers who may require that all of the components of our products are certified as conflict mineral free and/or free of numerous other hazardous materials.

Our failure to protect our intellectual property could adversely affect our future operations.

Our ability to compete is significantly affected by our ability to protect our intellectual property. We rely upon patents, trade secret laws, confidentiality procedures, copyrights, trademarks and licensing agreements to protect our technology. Existing trade secret, trademark and copyright laws offer only limited protection. Our success depends in part on our ability to obtain and enforce patent protection for our products both in the United States and in other countries. We own numerous U.S. and foreign patents, and we intend to file additional applications, as appropriate, for patents covering our products and technology. Any issued patents owned by or licensed to us may be challenged, invalidated or circumvented, and the rights under these patents may not provide us with competitive advantages. In addition, the laws of some countries in which our products are or may be developed, manufactured, or sold may not fully protect our products. Due to the rapid technological change that characterizes the life sciences and related process equipment industries, we believe that the improvement of existing technology, reliance upon trade secrets, unpatented proprietary know-how and the development of new products may be as important as patent protection in establishing and

maintaining a competitive advantage. To protect trade secrets and know-how, it is our policy to require all technical and management personnel to enter into nondisclosure agreements.

We cannot guarantee that the steps we have taken to protect our intellectual property will be adequate to prevent the misappropriation of our technology. Other companies could independently develop similar or superior technology without violating our intellectual property rights. In the future, it may be necessary to engage in litigation or like activities to enforce our intellectual property rights, to protect our trade secrets or to determine the validity and scope of proprietary rights of others, including our customers. This could require us to incur significant expenses and to divert the efforts and attention of our management and technical personnel from our business operations.

The expiration of our patents over time could lead to an increase of competition and a decline in our revenue.

One of our main competitive strengths is our technology, and we are dependent on our patent rights and other intellectual property rights to maintain our competitive position. Our current patents will expire from time to time through 2039 which could result in increased competition and declines in product and service revenue.

We may be subject to claims of infringement of third-party intellectual property rights, or demands that we license third-party technology, which could result in significant expense and prevent us from using our technology.

There has been substantial litigation regarding patent and other intellectual property rights in the industries in which we do business. We have in the past been, and may in the future be, notified that we may be infringing intellectual property rights possessed by third parties. We cannot guarantee that infringement claims by third parties or other claims for indemnification by customers or end-users of our products and services resulting from infringement claims will not be asserted in the future or that such assertions, whether or not proven to be true, will not materially and adversely affect our business, financial condition and results of operations.

We cannot predict the extent to which we might be required to seek licenses or alter our products or services so that they no longer infringe the rights of others. We also cannot guarantee that licenses will be available or the terms of any licenses we may be required to obtain will be reasonable. Similarly, changing our products, services or processes to avoid infringing the rights of others may be costly or impractical and could detract from the value of our products and services. If a judgment of infringement were obtained against us, we could be required to pay substantial damages and a court could issue an order preventing us from selling one or more of our products or offering certain of our services. Further, the cost and diversion of management attention brought about by such litigation could be substantial, even if we were to prevail. Any of these events could result in significant expense to us and may materially harm our business and our prospects.

Risks Related to Reliance on Third Parties

Our business could be materially harmed if one or more key suppliers fail to continuously deliver key components of acceptable cost and quality.

We currently obtain many of our key components on an as-needed, purchase order basis from numerous suppliers. In some cases, we have only a single source of supply for key components and materials used in the manufacturing of our products. Further, a portion of our supply is sourced from Asia, including China and we do not always have a previous history of dealing with these suppliers. Our inability to obtain components or materials in required quantities or of acceptable cost and quality and with the necessary continuity of supply could result in delays or reductions in product shipments to our customers. In addition, if a supplier or sub-supplier suffers a production stoppage or delay for any reason, including natural disasters, this could result in a delay or reduction in our product shipments to our customers. Any of these contingencies could cause us to lose customers, result in delayed or lost revenue and otherwise materially harm our business.

Our business could be adversely affected by a decline in the availability of raw materials.

We are dependent on the availability of certain key raw materials and natural resources used in our products and various manufacturing processes, and we rely on third parties to supply us with these materials in a cost-effective and timely manner. Our access to raw materials may be adversely affected if our suppliers' operations were disrupted as a

result of limited or delayed access to key raw materials and natural resources which may result in increased cost of these items.

Our outsource providers may fail to perform as we expect.

Outsource providers have played and will continue to play a key role in many of our transactional and administrative functions, such as information technology and facilities management. Many of these outsourced service providers, including certain hosted software applications that we use for confidential data storage, employ cloud computing technology for such storage. These providers' cloud computing systems may be susceptible to "cyber incidents," such as intentional cyber-attacks aimed at theft of sensitive data or inadvertent cyber-security compromises, which are outside of our control. Although we attempt to select reputable providers and secure their performance on terms documented in written contracts, it is possible that one or more of these providers could fail to perform or adequately protect our data from cyber-related security breaches as we expect and any such failure could have an adverse impact on our business.

Risks Relating to Our Customers

Customers generally do not make long term commitments to purchase our products and our customers may cease purchasing our products at any time.

Sales of our products are often made pursuant to individual purchase orders and not under long-term commitments and contracts. Our customers frequently do not provide any assurance of minimum or future sales and are not prohibited from purchasing products from our competitors at any time. Accordingly, we are exposed to competitive pricing pressures on each order.

We may face claims for liability related to damages of customer materials attributed to the failure of our products or services, exposing us to significant financial or reputational harm.

Our automated cold storage systems for the life sciences sample management market are used in the handling, movement and storage of biological and chemical samples. We also provide sample storage services to customers where we store their biological and chemical samples or perform genomics services at our facilities. In any case, inaccurate or faulty testing services or damage to our customers' materials attributed to a failure of our products or services could lead to claims for damages made by our customers and could also harm our relationship with our customers and damage our reputation, resulting in material harm to our business.

Risks Relating to Owning Our Securities

Our stock price is volatile.

The market price of our common stock has fluctuated widely. From the beginning of fiscal year 2021 through the end of fiscal year 2022, our stock price fluctuated between a high of $124.15 per share and a low of $42.86 per share. Consequently, the current market price of our common stock may not be indicative of future market prices, and we may be unable to sustain or increase the value of an investment in our common stock. Factors affecting our stock price may include:

- variations in operating results from quarter-to-quarter and year-to-year;
- changes in earnings estimates by analysts or our failure to meet analysts' expectations;
- changes in the market price per share of our public company customers;
- the timing and amount of any repurchases of our common stock under our recently approved share repurchase program;
- market conditions in the life sciences sample management and genomic services and other industries into which we sell products and services;

- global economic conditions;
- political changes, hostilities, the COVID-19 pandemic or similar events, or natural disasters such as hurricanes and floods;
- low trading volume of our common stock; and
- the number of firms making a market in our common stock.

In addition, the stock market has in the past experienced significant price and volume fluctuations. These fluctuations have particularly affected the market prices of the securities of high technology companies like ours. These market fluctuations could adversely affect the market price of our common stock.

Although we have initiated a share repurchase program, we cannot guarantee that our share repurchase program will limit our ability to further develop our business or whether the share repurchase program will be fully implemented or that it will enhance long-term stockholder value.

On November 4, 2022, our Board of Directors approved a new share repurchase program authorizing the repurchase of up to $1.5 billion of our common stock, or the 2022 Repurchase Program. Repurchases under the 2022 Repurchase Program may be made in the open market or through privately negotiated transactions (including under an accelerated share repurchase, or ASR, agreement), or by other means, including through the use of trading plans intended to qualify under Rule 10b5-1 under the Securities Exchange Act of 1934, as amended, subject to market and business conditions, legal requirements, and other factors. We are not obligated to acquire any particular amount of common stock under the 2022 Repurchase Program, and share repurchases may be commenced or suspended at any time at our discretion. Our ability to repurchase common stock under the 2022 Repurchase Program will depend upon, among other factors, our cash balances and potential future capital requirements for strategic investments, whether organic or through acquisitions, our results of operations, our financial condition and other factors beyond our control that we may deem relevant to a decision to repurchase common stock under the 2022 Repurchase Program.

Repurchases pursuant to our share repurchase program could affect the price of our common stock and increase its volatility. The existence of our share repurchase program could also cause the price of our common stock to be higher than it would be in the absence of such a program and could reduce the market liquidity for our common stock. Additionally, repurchases under our share repurchase program will diminish our cash reserves, which could impact our ability to further develop our business organically or through acquisitions or service any indebtedness we may incur in the future as a result of the reduction of our cash balances from the 2022 Repurchase Program or otherwise. There can be no assurance that any repurchases will enhance shareholder value because the market price of our common stock may decline below the levels at which we repurchased such shares. Any failure to repurchase shares after we have announced our intention to do so may negatively impact our reputation and investor confidence in us and may negatively impact our stock price. Although our share repurchase program is intended to enhance long-term stockholder value, short-term price fluctuations could reduce the program's effectiveness.

Our business and operations could be negatively affected by stockholder activism, which could impact the trading price and volatility of our common stock and may constrain capital deployment opportunities and adversely impact our ability to expand our business.

Our business and operations could be negatively affected if we become subject to any securities litigation or stockholder activism, which could cause us to incur significant expenses, hinder the execution of our business and growth strategy, constrain our capital deployment opportunities, and impact the price of our common stock.

Stockholder activism, which could take many forms or arise in a variety of situations, has been increasing recently. Volatility in the price of our common stock, our cash balance or other reasons may cause us to become the target of securities litigation or stockholder activism. Securities litigation and stockholder activism, including potential proxy contests, could result in substantial costs and divert management's and our Board of Director's attention and resources from our business. Additionally, such securities litigation and stockholder activism could give rise to perceived uncertainties as to our future, adversely affect our relationships with service providers and make it more difficult to

attract and retain qualified personnel. Also, we may be required to incur significant legal fees and other expenses related to any securities litigation and activist stockholder matters. Further, the price of our common stock could be subject to significant fluctuation or otherwise be adversely affected by the events, risks and uncertainties of any securities litigation and stockholder activism. If we become the focus of stockholder activism for any other reasons, we may be constrained in our capital deployment opportunities and may be limited in the types of investments that are available to us.

Provisions in our charter documents and Delaware law may delay or prevent an acquisition of us, which could decrease the value of your shares.

Our restated certificate of incorporation and by-laws and Delaware law contain provisions that could make it harder for a third party to acquire us without the consent of our Board of Directors. These provisions include limitations on actions by our stockholders by written consent, the inability of stockholders to call special meetings and the potential for super majority votes of our stockholders in certain circumstances. In addition, as discussed below, our Board of Directors has the right to issue preferred stock without stockholder approval, which could be used to dilute the stock ownership of a potential hostile acquirer.

Our restated certificate of incorporation makes us subject to the anti-takeover provisions of Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits publicly held Delaware corporations to which it applies 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. This provision could discourage others from bidding for our shares of common stock and could, as a result, reduce the likelihood of an increase in the price of our common stock that would otherwise occur if a bidder sought to buy our common stock.

Although we believe these provisions provide for an opportunity to receive a higher bid by requiring potential acquirers to negotiate with our Board of Directors, these provisions apply even if the offer may be considered beneficial by stockholders. If a change of control or change in management is delayed or prevented, the market price of our common stock could decline.

Our restated certificate of incorporation authorizes the issuance of shares of blank check preferred stock.

Our restated certificate of incorporation provides that our Board of Directors is authorized to issue from time to time, without further stockholder approval, up to 1,000,000 shares of preferred stock in one or more series and to fix and designate the rights, preferences, privileges and restrictions of the preferred stock, including dividend rights, conversion rights, voting rights, redemption rights and terms of redemption and liquidation preferences. Such shares of preferred stock could have preferences over our common stock with respect to dividends and liquidation rights. Our issuance of preferred stock may have the effect of delaying or preventing a change in control. Our issuance of preferred stock could decrease the amount of earnings and assets available for distribution to the holders of common stock or could adversely affect the rights and powers, including voting rights, of the holders of common stock. The issuance of preferred stock could have the effect of decreasing the market price of our common stock.

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

None.

Item 2. ***Properties***

Our corporate headquarters are currently located in Chelmsford, Massachusetts. We maintained the following principal facilities as of September 30, 2022:

Location	Functions	Square Footage (Approx.)	Ownership Status/Lease Expiration
Suzhou, China	Laboratory & office	240,000	Owned
Indianapolis, Indiana	Sample storage, sales & support	116,700	September 2038
South Plainfield, New Jersey	Laboratory & office	73,300	January 2030
Plainfield, Indiana	Manufacturing, R&D and sales & support	67,900	August 2032
Springfield, Illinois	Manufacturing, R&D and sales & support	65,100	May 2026
Burlington, Massachusetts	Future corporate headquarters	42,000	October 2025
Chelmsford, Massachusetts	Corporate headquarters, training, R&D and sales & support	26,200	January 2024

Our Chelmsford, Massachusetts facility was included in the sale of our semiconductor automation business and upon the completion of the sale, we leased space in this facility as we transition to a new corporate headquarters in Burlington, Massachusetts.

In addition to the principal facilities listed above, we maintain additional laboratories, biorepositories, and sales and support offices in Canada, Europe, Asia, and throughout the United States.

Item 3. ***Legal Proceedings***

We are subject to various legal proceedings, both asserted and unasserted, that arise in the ordinary course of business. We cannot predict the ultimate outcome of such legal proceedings or in certain instances provide reasonable ranges of potential losses. However, as of the date of this Form 10-K, we believe that none of these claims will have a material adverse effect on our consolidated financial condition or results of operations. In the event of unexpected subsequent developments and given the inherent unpredictability of these legal proceedings, there can be no assurance that our assessment of any claim will reflect the ultimate outcome and an adverse outcome in certain matters could, from time-to-time, have a material adverse effect on our consolidated financial condition or results of operations in particular quarterly or annual periods.

Item 4. ***Mine Safety Disclosures***

Not applicable.

PART II

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

Our common stock is traded on the Nasdaq Stock Market LLC, or Nasdaq under the symbol "AZTA."

Number of Holders

As of November 14, 2022, there were 492 holders of record of our common stock.

Dividend Policy

Dividends are declared at the discretion of our Board of Directors and depend on actual cash flow from operations, our financial condition, capital requirements and any other factors our Board of Directors may consider relevant. Future dividend declarations, as well as the record and payment dates for such dividends, will be determined by our Board of Directors on a quarterly basis.

Since the completion of the sale of the semiconductor automation business on February 1, 2022, we have not paid a quarterly dividend and do not have plans to pay any dividends at this time.

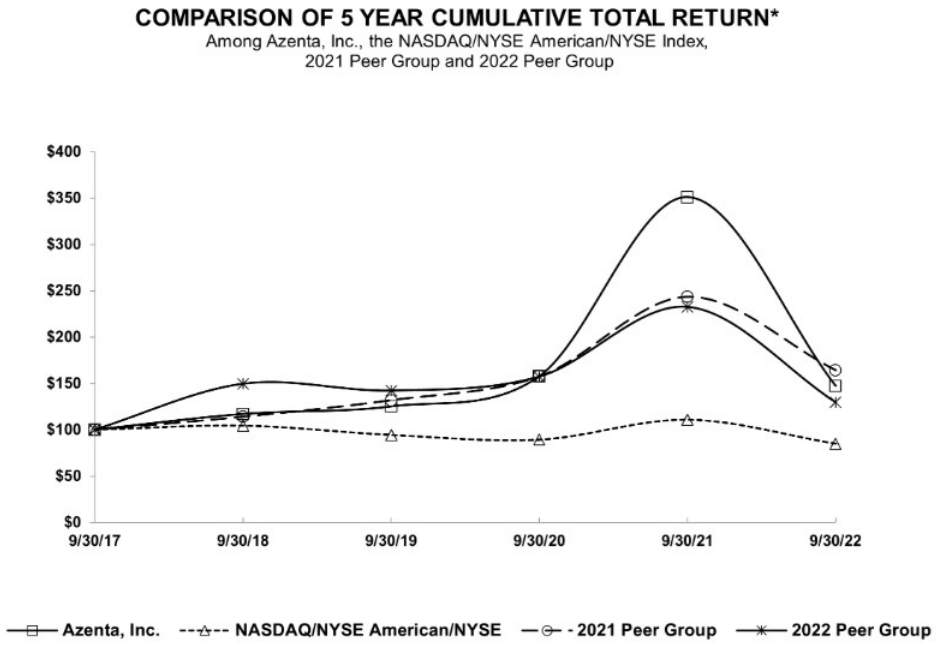
Comparative Stock Performance

The following graph compares the cumulative total shareholder return (assuming reinvestment of dividends) from investing $100 on September 30, 2017, and plotted at the last trading day of each of the fiscal years ended September 30, 2018, 2019, 2020, 2021 and 2022, in each of (i) our Common Stock; (ii) the Nasdaq/NYSE American/NYSE Index of companies; and (iii) a peer group for the fiscal year ended September 30, 2022.

The 2022 peer Group for the year ended September 30, 2022 is comprised of Angiodynamics Inc, Caredx Inc, Certara Inc, Haemonetics Corp, Icu Medical Inc, Integra Lifesciences Holdings Corp, Maravai Lifesciences Holdings Inc, Medpace Holdings Inc, Neogenomics Inc, Nuvasive Inc, Orasure Technologies Inc, Repligen Corp, Sotera Health Co, and Varex Imaging Corp. The peer group for 2022 was updated to remove semiconductor automation companies, as we no longer serve that market following the sale of the semiconductor automation business on February 1, 2022.

The 2021 peer Group for the year ended September 30, 2022 is comprised of Advanced Energy Industries Inc, Axcelis Technologies Inc, Bio Rad Laboratories Inc, Bruker Corp, Coherent Corp, Entegris Inc, Formfactor Inc, Haemonetics Corp, Mks Instruments Inc, Novanta Inc, Onto Innovation Inc, Ultra Clean Holdings Inc, Varex Imaging Corp, and Veeco Instruments Inc.

The stock price performance on the graph below is not necessarily indicative of future price performance.



	9/30/2017	9/30/2018	9/30/2019	9/30/2020	9/30/2021	9/30/2022
Azenta, Inc.	$ 100.00	$ 116.96	$ 125.14	$ 157.85	$ 350.95	$ 147.10
Nasdaq/NYSE American/NYSE	100.00	104.37	94.39	89.29	110.75	84.98
2021 Peer Group	100.00	113.97	131.79	157.47	243.29	164.14
2022 Peer Group	100.00	149.60	142.24	157.37	232.57	129.51

The information included under the heading “Comparative Stock Performance” in Item 5 of Form 10-K shall not be deemed to be “soliciting material” or subject to Regulation 14A, shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or the Exchange Act, or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933, as amended, or under the Exchange Act.

Issuer’s Purchases of Equity Securities

On September 29, 2015, our Board of Directors approved a share repurchase program for up to $50 million of our common stock, or the 2015 Repurchase Program. On November 4, 2022, our Board of Directors terminated the 2015 Repurchase Program and approved a new share repurchase program authorizing the repurchase of up to $1.5 billion of our common stock, or the 2022 Repurchase Program. Repurchases under the 2022 Repurchase Program may be made in the open market or through privately negotiated transactions (including under an accelerated share repurchase, or ASR, agreement), or by other means, including through the use of trading plans intended to qualify under Rule 10b5-1 under the Securities Exchange Act of 1934, as amended, subject to market and business conditions, legal requirements, and

other factors. We are not obligated to acquire any particular amount of common stock under the 2022 Repurchase Program, and share repurchases may be commenced or suspended at any time at our discretion. As part of the 2022 Repurchase Program, we expect to enter into an ASR agreement for the repurchase of up to $500 million of our common stock. There were no repurchases of our common stock during the fiscal year ended September 30, 2022 and no such repurchases thereafter under the 2015 Repurchase Program.

Item 6. [Reserved]

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

This Management's Discussion and Analysis of Financial Condition and Results of Operations, or MD&A, describes principal factors affecting the results of our operations, financial condition and liquidity, as well as our critical accounting policies and estimates that require significant judgment and thus have the most significant potential impact on our Consolidated Financial Statements included elsewhere in this Form 10-K. Our MD&A is organized as follows:

- *Overview*. This section provides a general description of our business and operating segments, recent developments, as well as a brief discussion and overall analysis of our business and financial performance, including key developments affecting us during fiscal years ended September 30, 2022 and 2021.

- *Critical Accounting Policies and Estimates.* This section discusses accounting policies and estimates that require us to exercise subjective or complex judgments in their application. We believe these accounting policies and estimates are important to understanding the assumptions and judgments incorporated in our reported financial results.

- *Results of Operations.* This section provides an analysis of our financial results for the fiscal year ended September 30, 2022 compared to the fiscal year ended September 30, 2021.

- *Liquidity and Capital Resources.* This section provides an analysis of our liquidity and changes in cash flows, as well as a discussion of contractual commitments.

You should read the MD&A in conjunction with our Consolidated Financial Statements and related notes in this Form 10-K. In addition to historical information, the MD&A contains forward-looking statements that involve risks and uncertainties. You should read "Information Related to Forward-Looking Statements" and Item 1A, "Risk Factors" included above in this Form 10-K for a discussion of important factors that could cause our actual results to differ materially from our expectations.

Impact of the COVID-19 Pandemic

We have implemented business continuity plans designed to address the COVID-19 pandemic and minimize the disruption to ongoing operations. Since the beginning of the COVID-19 pandemic in March 2020, however, our business has been impacted at various times by reduced demand for services from customers experiencing lockdowns and quarantines, travel restrictions impacting our ability to service our products, supply chain constraints, increased competition for talent, and governmental mandates at times constraining our employees' ability to work at our facilities. During the third quarter ended June 30, 2022, we experienced a two-week facility closure in Suzhou, China as a result of local government protocols and mandates. As we expect the pandemic to continue to evolve, we will continue monitoring and assessing the effects of the COVID-19 pandemic on our business. However, we cannot at this time accurately predict what effects these conditions will ultimately have on our operations due to uncertainties relating to variants of the virus, vaccine effectiveness against the variants, the duration of any future outbreak and the pandemic itself, and the length of the travel restrictions and business closures imposed by the governments of impacted countries. Our financial results will also depend on variables including reduced demand from our customers, the degree that the supply chain may be constrained which could impact our delivery of products and services and the potential negative impact on our operations if there is an outbreak among our employees, as well as the amount of incremental demand caused by research and treatments in the areas of COVID-19 or related threats.

OVERVIEW

General

We are a leading global provider of life science sample exploration and management solutions for the life sciences market. We entered the life sciences market in 2011, leveraging our in-house capabilities of precision automation and cryogenics that we applied significantly in the semiconductor market, to provide solutions for automated ultra cold storage. Since then, we have expanded our offerings both organically and through a series of acquisitions. We now support our customers from research to clinical development with our sample management, automated storage, and genomic services expertise to help our customers bring impactful therapies to market faster. We understand the importance of sample integrity and offer a broad portfolio of products and services supporting customers at every stage of the life cycle of samples including procurement and sourcing, automated storage systems, genomic services and a multitude of sample consumables, informatics and data software, and sample repository solutions. Our expertise, global footprint and leadership position enables us to be a trusted partner to pharmaceutical, biotechnology, and life sciences research institutions globally. In total, we employed approximately 3,200 full-time employees, part-time employees and contingent workers worldwide as of September 30, 2022 and have sales in approximately 100 countries. We are headquartered in Chelmsford, Massachusetts and have operations in North America, Asia, and Europe.

Our portfolio includes products and services offerings developed by us internally as well as many offerings we have added through multiple acquisitions designed to bring together a comprehensive capability to service our customers' needs in the sample-based services arena. We continue to develop new products and services offerings and enhance existing and acquired offerings through the expertise of our research and development resources. We believe our approach of acquisition, investment, and integration has allowed us to accelerate our internal development and significantly accelerate our time to market.

Within our Life Sciences Products segment, we have developed and continue to develop automated biological sample storage solutions for operating in low temperature environments. We have a complete line up of automated stores from ambient temperatures to -190°C. Our BioStore's ™ unique design allows controlled temperature storage down to -80°C with the industry's highest throughput of sample retrieval.

Within our Life Sciences Services segment, our genomics services business advances research and development activities by gene sequencing, synthesis, editing and related services. We offer a comprehensive, global portfolio that we believe has both broad appeal in the life sciences industry and enables customers to select the best solution for their research challenges. This portfolio also offers unique solutions for key markets such as cell and gene therapy, antibody development, and biomarker discovery by addressing genomic complexity and throughput challenges. Our sample repository solutions business is a global leader in sample storage and management, and provides a full suite of reliable cold and ultra-cold chain solutions.

Sale of the Semiconductor Automation Business

In the fourth quarter of fiscal year 2021, we entered into a definitive agreement to sell our semiconductor automation business to Thomas H. Lee, Partners, L.P., or THL, and completed the sale on February 1, 2022, for $2.9 billion in cash. In connection with the planned divestiture of the semiconductor automation business and our continued focus on our life sciences businesses, we changed our corporate name from "Brooks Automation, Inc." to "Azenta, Inc." and our common stock started to trade on the Nasdaq Global Select Market under the symbol "AZTA" on December 1, 2021.

Since our founding in 1978, we had been a leading automation provider and partner to the global semiconductor manufacturing industry. With the completion of the sale of the semiconductor automation business, we no longer serve the semiconductor market. The semiconductor automation business has been classified as a discontinued operation and, unless otherwise noted, this MD&A relates solely to our continuing operations and does not include the operations of our semiconductor automation business.

Segments

Our business is comprised of two reportable segments, our Life Sciences Products segment and our Life Sciences Services segment. For further information on our reportable and operating segments, please refer to Note 18, "Segment

and Geographic Information" to our Consolidated Financial Statements included under Item 8, "Financial Statements and Supplementary Data" of this Form 10-K.

Our Life Sciences Products business is a leading provider of automated cold storage solutions for biological and chemical compound samples. Our storage systems provide reliable automation and sample inventory management at temperatures down to -190°C and can store anywhere from one to millions of samples. Our sample management solutions include consumable vials and tubes, PCR plates, instruments for supporting workflows, and informatics. This portfolio provides customers with the highest level of sample quality, security, availability, intelligence and integrity throughout the lifecycle of samples providing customers with complete end-to-end "cold-chain of custody" capabilities. On July 1, 2022, we acquired Barkey Holding GmbH and its subsidiaries, or Barkey, a leading provider of controlled rate thawing devices for customers in the medical, biotech and pharmaceutical industries, headquartered in Leopoldshöhe, Germany.

Our Life Sciences Services business is a leading provider of solutions addressing the many needs of customers in the area of genomic analysis and the management and care of biological samples used in pharmaceutical, biotech, healthcare, clinical, and academic research and development markets. We process millions of samples every year, each containing valuable information that must be preserved with the sample. Our genomic services provide a broad capability to customers for sequencing and synthesis of genes. Our sample management services include off-site storage services, transport services, laboratory services, and interactive informatics solutions. We also provide expert-level consultation services to our clients throughout their experimental design and implementation. Our services also include short- and long-term sample storage and management of the "cold chain of custody" from collection, to storage, to retrieving the sample which ultimately may go back into the research workflow.

Acquisition completed after fiscal year end

On October 3, 2022, we acquired B Medical Systems S.á r.l and its subsidiaries, or B Medical, a market leader in temperature-controlled storage and transportation solutions that enables the delivery of life-saving treatments to more than 150 countries worldwide. This acquisition complements our cold chain capabilities, adding differentiated solutions for reliable and traceable transport of temperature-sensitive specimens.

Business and Financial Performance

Our performance for the twelve months ended September 30, 2022, 2021 and 2020 are as follows:

	Year Ended September 30,		
Dollars in thousands	2022	2021	2020
Revenue	$ 555,498	$ 513,703	$ 388,537
Cost of revenue	299,914	269,894	216,389
Gross profit	255,584	243,809	172,148
Operating expenses			
Research and development	27,542	22,412	17,818
Selling, general and administrative	252,065	252,101	190,256
Restructuring charges	712	385	674
Total operating expenses	280,319	274,898	208,748
Operating loss	(24,735)	(31,089)	(36,600)
Interest income	20,286	632	849
Interest expense	(4,589)	(2,037)	(2,944)
Loss on extinguishment of debt	(632)	—	—
Other expense, net	(266)	(16,475)	(1,597)
Loss before income taxes	(9,936)	(48,969)	(40,292)
Income tax provision (benefit)	1,350	(20,100)	(13,930)
Loss from continuing operations	$ (11,286)	$ (28,869)	$ (26,362)
Income from discontinued operations, net of tax	2,144,145	139,616	91,215
Net income	$ 2,132,859	$ 110,747	$ 64,853

Results of Operations

Fiscal Year Ended September 30, 2022 Compared to Fiscal Year Ended September 30, 2021

Revenue increased 8% for the fiscal year 2022 as compared to the prior fiscal year driven by revenue growth in our Life Sciences Services segment of 13%. Gross margin was 46% for fiscal year 2022 compared to 47.5% for fiscal year 2021. Operating expenses in fiscal year 2022 increased by $5.4 million compared to the prior fiscal year due to increases in both research and development expenses and selling, general and administrative expenses. We reported an operating loss of $24.7 million for fiscal year 2022 compared to an operating loss of $31.1 million for fiscal year 2021, primarily due to the retirement of tradenames related to the rebranding of the Life Sciences business of $13.4 million and a charge related to liabilities for import tariffs related to imports in prior fiscal years that took place in the fourth quarter of 2021. This was partially offset by inflation and investment in the business. We also recorded $16 million of net interest income from our investments in marketable securities in fiscal year 2022. Overall, we generated a net loss from continuing operations of $11.3 million during fiscal year 2022 compared to a net loss from continuing operations of $28.9 million in fiscal year 2021. Please refer to the “Results of Operations” section below for a detailed discussion of our financial results for the fiscal year 2022 compared to fiscal year 2021.

Cash Flows and Liquidity -

Our cash and cash equivalents, restricted cash and marketable securities were $2.3 billion as of September 30, 2022 and $244.0 million as of September 30, 2021. Fiscal year 2021 excludes $45.0 million of cash classified as assets held for sale related to the semiconductor automation business.

Cash and cash equivalents and restricted cash as presented on our Consolidated Statements of Cash Flows are on a total company basis and were $1.0 billion as of September 30, 2022 compared to $285.3 million as of September 30, 2021. The increase of $0.8 billion was attributable to $1.5 billion of investing activities, including $2.9 billion of proceeds from the sale of the semiconductor automation business offset by $1.5 billion of investments in marketable securities, new acquisitions and capital equipment; $63 million of cash outflow from financing activities, and $466

million of cash outflows from operating activities. The cash outflow from operating activities includes $431.6 million of taxes and $52.5 million of fees related to the sale of the semiconductor automation business. The effects of foreign exchange reduced the cash balance by $180.8 million.

Please refer to the “Liquidity and Capital Resources” section below for a detailed discussion of our liquidity and changes in cash flows for fiscal year 2022 compared to fiscal year 2021.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

The preparation of the Consolidated Financial Statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue and expenses, and related disclosure of contingent assets and liabilities. On an ongoing basis, we evaluate our estimates, including those related to revenue, intangible assets, goodwill, inventories, income taxes, and stock-based compensation. We base our estimates on historical experience and various other assumptions that are believed to be reasonable under the circumstances. We evaluate current and anticipated worldwide economic conditions, both in general and specifically in relation to the life science industry, that serve as a basis for making judgments about the carrying values of assets and liabilities that are not readily determinable based on information from other sources. Actual results may differ from these estimates under different assumptions or conditions that could have a material impact on our financial condition and results of operations.

We believe that the assumptions and estimates associated with the following critical accounting policies involve significant judgment and thus have the most significant potential impact on our Consolidated Financial Statements.

Revenue Recognition

We generate revenue from the sale of products and services. A description of our revenue recognition policies is included in the Note 2, “Summary of Significant Accounting Policies” in the Notes to the Consolidated Financial Statements included in Item 8, "Financial Statements and Supplementary Data" of this Form 10-K.

Although most of our sales agreements contain standard terms and conditions, certain agreements contain multiple performance obligations or non-standard terms and conditions. For customer contracts that contain more than one performance obligation, we allocate the total transaction consideration to each performance obligation based on the relative stand-alone selling price of each performance obligation within the contract. We rely on either observable standalone sales or an expected cost-plus margin approach to determine the standalone selling price of offerings, depending on the nature of the performance obligation. Performance obligations whose standalone selling price is estimated using an expected cost-plus margin approach relate to the sale of customized automated cold sample management systems and service-type warranties within the Life Sciences Products segment.

Revenue from the sales of certain products that involve significant customization, which primarily include automated cold sample management systems is recognized over time as the asset created by our performance does not have alternative use to us and an enforceable right to payment for performance completed to date is present. We recognize revenue as work progresses based on a percentage of actual labor hours incurred on the project to-date and total estimated labor hours expected to be incurred on the project. The selection of the method to measure progress towards completion requires judgment. We have concluded that using the percentage of labor hours incurred to estimated labor hours needed to complete the project most appropriately depicts our efforts towards satisfaction of the performance obligation. We develop profit estimates for long-term contracts based on total revenue expected to be generated from the project and total costs anticipated to be incurred in the project. These estimates are based on a number of factors, including the degree of required product customization and the work required to be able to install the product in the customer’s existing environment, as well as our historical experience, project plans and an assessment of the risks and uncertainties inherent in the contract related to implementation delays or performance issues that may or may not be within our control. We estimate a loss on a contract by comparing total estimated contract revenue to the total estimated contract costs and recognize a loss during the period in which it becomes probable and can be reasonably estimated. We review profit estimates for long-term contracts during each reporting period and revise the estimate based on changes in circumstances.

If our judgment regarding revenue recognition proves incorrect, our revenue in particular periods may be adversely affected and could have a material impact on our financial condition and results of operations.

Business Combinations

We account for business acquisitions using the purchase method of accounting, in accordance with which assets acquired and liabilities assumed are recorded at their respective fair values at the acquisition date. The fair value of the consideration paid, including contingent consideration, is assigned to the assets acquired and liabilities assumed based on their respective fair values. Goodwill represents the excess of the purchase price over the estimated fair values of the assets acquired and liabilities assumed.

Significant judgment is used in determining fair values of assets acquired, liabilities assumed and contingent consideration, as well as intangibles and their estimated useful lives. Fair value and useful life determinations may be based on, among other factors, estimates of future expected cash flows, royalty cost savings and appropriate discount rates used in computing present values. For all the current year acquisitions, management applied significant judgment in estimating the fair value of the acquired intangible assets, which involved significant estimates and assumptions with respect to forecast revenue growth rates and the discount rates. These judgments may materially impact the estimates used in allocating acquisition date fair values to assets acquired and liabilities assumed, as well as our current and future operating results. Actual results may vary from these estimates that may result in adjustments to goodwill and acquisition date fair values of assets and liabilities during a measurement period or upon a final determination of asset and liability fair values, whichever occurs first. Adjustments to fair values of assets and liabilities made after the end of the measurement period are recorded within our operating results.

Intangible Assets, Goodwill and Other Long-Lived Assets

We have identified intangible assets and generated significant goodwill as a result of our acquisitions. Intangible assets other than goodwill are valued based on estimated future cash flows and amortized over their estimated useful lives. Goodwill is tested for impairment annually or more often if impairment indicators are present, at the reporting unit level. Intangible assets other than goodwill and long-lived assets are subject to impairment testing if events and circumstances indicate that the carrying amount of an asset or a group of assets may not be recoverable.

The goodwill impairment test is performed at the reporting unit level. A reporting unit is either an operating segment or one level below it, which is referred to as a “component.” The level at which the impairment test is performed requires an assessment of whether the operations below an operating segment constitute a self-sustaining business, in which case testing is generally performed at this level.

We have two operating and two reportable segments consisting of Life Sciences Products and Life Sciences Services. We previously had three reporting units, which included the Life Sciences Products operating segment, which constitutes of a single reporting unit, and two reporting units within the Life Sciences Services operating segment, sample repository solutions and genomic services, which have been combined into a single reporting unit within the Life Sciences Services segment following the 2021 impairment test. See Note 8, “Goodwill and Intangible Assets” for additional information.

We perform our annual goodwill impairment assessment on April 1st of each fiscal year. We evaluate a reporting unit’s goodwill for impairment between annual tests if events occur or circumstances change that would more likely than not reduce the fair value of such reporting unit below its carrying value. In accordance with Accounting Standards Codification 350, *Intangibles- Goodwill and Other*, we initially assess qualitative factors to determine whether the existence of events or circumstances indicates that it is more likely than not that the fair value of a reporting unit is less than its carrying value. If we determine, based on this assessment, that it is more likely than not that the fair value of the reporting unit is less than its carrying value, we perform a quantitative goodwill impairment test by comparing the reporting unit’s fair value with its carrying value. An impairment loss is recognized for the amount by which the reporting unit’s carrying value exceeds its fair value, up to the total amount of goodwill allocated to the reporting unit. No impairment loss is recognized if the fair value of the reporting unit exceeds its carrying value.

We determine fair values of our reporting units based on an income approach in accordance with the discounted cash flow method, or DCF Method. The DCF Method is based on projected future cash flows and terminal value estimates discounted to their present values. Terminal value represents a present value an investor would pay on the valuation date for the rights to the cash flows of the business for the years subsequent to the discrete cash flow projection period. We consider the DCF Method to be the most appropriate valuation technique since it is based on management's long-term financial projections. In addition to determining the fair value of our reporting units based on the DCF Method, we also compare the aggregate values of our net corporate assets and reporting unit fair values to our overall market capitalization and use certain market-based valuation techniques to assess the reasonableness of the reporting unit fair values determined in accordance with the DCF Method. The key inputs used in the DCF Method include revenue growth rates, gross margin percentage, selling, general and administrative expense percentage and discount rates that are at or above our weighted-average cost of capital. We derive discount rates that are commensurate with the risks and uncertainties inherent in the respective reporting units and our internally developed projections of future cash flows.

Application of the goodwill impairment test requires judgment based on market and operational conditions at the time of the evaluation, including management's best estimates of the reporting unit's future business activity and the related estimates and assumptions of future cash flows from the assets that include the associated goodwill. Different assumptions of revenue growth rates, gross margin percentage, selling, general and administrative expense percentage and the discount rate used in the DCF Method could result in different estimates of the reporting unit's fair value as of each testing date.

We completed our annual goodwill impairment test as of April 1, 2022 for our continuing operations Life Sciences Products and Life Sciences Services segments. Based on the test results, we determined that no adjustment to goodwill was necessary at that time. We conducted a qualitative assessment for the Life Sciences Products and Life Sciences Services reporting units and determined that it was more likely than not that its fair value was greater than their carrying value. As a result of the analysis, we did not perform the quantitative assessment, and did not recognize any impairment losses.

In the fourth quarter of 2022, we experienced a decline in our stock price resulting in our market capitalization being less than our carrying value of our reporting units. Therefore, as of September 30, 2022, we assessed several events and circumstances that could affect the significant inputs used to determine the fair value of our reporting units, including updates to operating margins and cash flows, and the overall change in the economic climate. We considered the decline in the market capitalization being less than the carrying value of our reporting units in our evaluation of goodwill impairment indicators and determined it appropriate to perform a quantitative assessment of both our reporting units as of September 30, 2022. Our valuation was based on the DCF Method. We concluded that there was no impairment, as the estimated fair value of the segments exceeded their carrying value.

In the event the financial performance of either of the segments does not meet our expectations in the future, we experience a prolonged macro or market downturn, or there are other negative revisions to key assumptions used in our DCF Method, we may be required to perform additional impairment analyses and could be required to recognize a non-cash impairment charge.

We are required to test long-lived assets, other than goodwill, for impairment when impairment indicators are present. For purposes of this test, long-lived assets are grouped with other assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. If we determine that indicators of potential impairment are present, we assess the recoverability of the long-lived asset group by comparing its undiscounted future cash flows to its carrying value. If the carrying value of the long-lived asset group exceeds its future cash flows, we determine fair values of the individual net assets within the long-lived asset group to assess potential impairment. If the aggregate fair values of the individual net assets of the group are less than their carrying values, an impairment loss is recognized for an amount in excess of the group's aggregate carrying value over its fair value. The loss is allocated to the assets within the group based on their relative carrying values, with no asset reduced below its fair value.

We did not test our long-lived assets for impairment during fiscal year 2022 since no events indicating impairment occurred during the periods then ended.

During the fourth quarter of fiscal year 2021, we announced that the life sciences businesses would be rebranded under a single, unified life sciences brand, Azenta Life Sciences, or Azenta, during the first half of fiscal year 2022. We concluded that the abandoned tradenames for these businesses were fully impaired in the fiscal fourth quarter of 2021 and recorded a $13.4 million charge for the tradename impairment loss. The impairment loss is included in the Selling, general and administrative expense in our Consolidated Statements of Operations.

Inventory

We state our inventory at the lower of cost or market and make adjustments to reduce the inventory cost to its net realizable value by providing estimated reserves for excess or obsolete inventory. The reserves are established for the difference between the cost of inventory and its estimated market value based on assumptions related to future demand and market conditions to reduce the carrying value to its net realizable value. We fully reserve for inventories and non-cancelable purchase orders for inventory deemed obsolete. We perform periodic reviews of our inventory to identify excess inventories on hand. We compare on-hand inventory balances to anticipated inventory usage based on our recent historical activity and anticipated or forecasted demand for our products developed through our planning systems and sales and marketing inputs.

We adjust the reserves for excess or obsolete inventory and record additional inventory write downs based on unfavorable changes in estimated customer demand or actual market conditions that may differ from management projections.

Deferred Income Taxes

We record a valuation allowance to reduce our deferred tax assets to the amount that is more likely than not to be realized. We consider recent historical income, estimated future taxable income, carry-forward periods of tax attributes, and ongoing tax planning strategies in assessing the need for the valuation allowance. We evaluate the realizability of our deferred tax assets by tax-paying component and assess the need for a valuation allowance on an annual and quarterly basis. We evaluate the profitability of each tax-paying component on a historic cumulative basis and on a forward-looking basis while performing this analysis. We continue to hold a U.S. valuation allowance related to the realizability of certain state tax credits and net operating loss carry-forwards. We also maintain valuation allowances against net deferred tax assets in certain foreign tax-paying components as of the end of fiscal year 2022.

Stock-Based Compensation

We measure compensation cost for all employee stock awards at fair value on the date of grant and recognize compensation expense over the service period for awards expected to vest. The fair value of restricted stock units is determined based on the number of shares granted and the closing price of our common stock quoted on the Nasdaq Global Select Market on the date of grant. In addition, for stock-based awards where vesting is dependent upon achieving certain operating performance goals, we estimate the likelihood of achieving the performance goals. Actual results, and future changes in estimates, may differ from our current estimates.

Recently Issued Accounting Pronouncements

For a summary of recently issued accounting pronouncements applicable to our Consolidated Financial Statements which is incorporated here by reference, please refer to Note 2, “Summary of Significant Accounting Policies” in the Notes to the Consolidated Financial Statements included in Item 8, “Financial Statements and Supplementary Data” of this Form 10-K.

RESULTS OF OPERATIONS

Please refer to the commentary provided below for further discussion and analysis of the factors contributing to our results from operations for the twelve months ended September 30, 2022 and 2021. A comparison of our results for the fiscal year ended September 20, 2021 to the fiscal year ended September 20, 2020 is included in Part II, Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in our Annual Report on Form 10-K for fiscal year ended September 30, 2021, filed with the SEC on November 24, 2021.

Revenue

Our revenue performance for the twelve months ended September 30, 2022, 2021, and 2020 is as follows:

	Year Ended September 30,				
Dollars in thousands	**2022**	**2021**	**2020**	**% Change**	**% Change**
Life Sciences Products	199,230	199,606	129,759	*(0)%*	*54 %*
Life Sciences Services	356,268	314,097	258,778	*13 %*	*38 %*
Total revenue	555,498	513,703	388,537	*8 %*	*43 %*

Fiscal Year Ended September 30, 2022 Compared to Fiscal Year Ended September 30, 2021

Revenue for fiscal year 2022 increased 8% as compared to the prior fiscal year. The COVID-19 pandemic has had varying impacts on our business for the fiscal year ended September 30, 2022. Further discussion of the impacts of the COVID-19 pandemic has had on each segment are discussed below.

Our Life Sciences Products segment revenue was decreased slightly over year. This was due to growth in stores & services product lines which was offset by a reduction in consumables and instruments, as COVID-19 related demand declined in fiscal 2022 from the prior fiscal year.

Our Life Sciences Services segment revenue increased 13% in fiscal year 2022 compared to the prior fiscal year, with double digit growth in both our genomics and sample repository solutions businesses. Sample repository solutions revenue increased 18% in fiscal year 2022 compared to the prior fiscal year due to the growth in our storage services. Genomic services revenue increased 11% in fiscal year 2022 compared to the prior fiscal year primarily due to an increase in our next generation sequencing business.

We estimate that revenue related to the COVID-19 pandemic for the fiscal year ended September 30, 2022 was approximately $22 million in the aggregate primarily attributable to the increased demand for our consumables and instruments products as compared to COVID-related revenue of $53 million for the year ended September 30, 2021.

We anticipate continued growth in revenue from our life sciences products and services businesses through our internally developed products and services and through our acquired businesses and potential future acquisitions.

Revenue generated outside the United States amounted to $184.9 million, or 33% of total revenue, for fiscal year 2022 compared to $192.9 million, or 38% of total revenue, for fiscal year 2021.

Operating Income (Loss)

Our operating performance for the twelve months ended September 30, 2022, 2021 and 2020 is as follows:

Dollars in thousands	Year Ended September 30, 2022	2021	2020
Revenue:			
Life Sciences Products	$ 199,230	$ 199,606	$ 129,759
Life Sciences Services	356,268	314,097	258,778
Total revenue	$ 555,498	$ 513,703	$ 388,537
Operating income:			
Life Sciences Products	$ 11,033	$ 23,094	$ (3,041)
Life Sciences Products adjusted operating margin	*6 %*	*12 %*	*(2)%*
Life Sciences Services	$ 10,784	$ 22,659	$ 2,859
Life Sciences Services adjusted operating margin	*3 %*	*7 %*	*1 %*
Segment adjusted operating income	$ 21,817	$ 45,753	$ (182)
Total segment adjusted operating margin	*4 %*	*9 %*	*(0)%*
Amortization of completed technology	7,325	8,073	8,099
Restructuring related charges	—	—	301
Impairment of intangible assets	—	13,364	—
Amortization of acquired intangible assets	24,965	29,299	27,276
Restructuring charges	712	385	674
Tariff adjustment	(484)	5,414	—
Other unallocated corporate expenses	14,034	20,307	68
Total operating loss	$ (24,735)	$ (31,089)	$ (36,600)
Total operating margin	*(4)%*	*(6)%*	*(9)%*

We reported an operating loss of $24.7 million for fiscal year 2022 compared to an operating loss of $31.1 million for fiscal year 2021. The decrease in operating loss was primarily due to the impairment of a trademark in 2021 of $13.4 million.

Operating income for our Life Sciences Products segment was $11.0 million for fiscal year 2022 compared to an operating income of $22.0 million for fiscal year 2021. Cost of sales for our Life Sciences Products segment includes charges for amortization related to completed technology of $1.1 million for both fiscal years 2022 and 2021. Adjusted operating income for our Life Sciences Products segment, which excludes the charges mentioned above, was $12.2 million for fiscal year 2022 and adjusted operating income in fiscal year 2021 was $23.1 million after excluding these charges. Please refer to Note 18, “Segment and Geographic Information”.

Operating income for our Life Sciences Services segment was $10.8 million for fiscal year 2022, a slight increase as compared to an operating income of $10.3 million for fiscal year 2021. Cost of sales for our Life Sciences Services segment includes charges for amortization related to completed technology of $6.3 million for fiscal year 2022 and $7.0 million for 2021. Fiscal year 2021 cost of sales includes $5.4 million of cost accrued for tariff liabilities related to intercompany import activities that occurred during the fiscal years from 2016 to 2020. Adjusted operating income for our Life Sciences Services segment, which excludes the charges mentioned above, was $16.8 million for fiscal year 2022 and adjusted operating income in fiscal year 2021 was $22.7 million after excluding these charges. Please refer to Note 18, “Segment and Geographic Information”.

Gross Margin

Our gross margin performance for the twelve months ended September 30, 2022, 2021 and 2020 is as follows:

	Life Science Products			Life Science Services			Azenta Total		
	Year Ended September 30,			Year Ended September 30,			Year Ended September 30,		
Dollars in thousands	2022	2021	2020	2022	2021	2020	2022	2021	2020
Revenue	$ 199,230	$ 199,606	$ 129,759	$ 356,268	$ 314,097	$ 258,778	$ 555,498	$ 513,703	$ 388,537
Gross profit	89,074	92,560	55,718	166,523	151,246	116,428	255,597	243,806	172,146
Gross margin	*44.7 %*	*46.4 %*	*42.9 %*	*46.7 %*	*48.2 %*	*45.0 %*	*46.0 %*	*47.5 %*	*44.3 %*
Adjustments:									
Amortization of completed technology	1,122	1,117	1,165	6,202	6,957	6,935	7,324	8,074	8,100
Other adjustment	—	—	—	289	(83)	301	289	(83)	301
Tariff adjustment	—	—	—	(484)	5,497	—	(484)	5,497	—
Adjusted gross profit	$ 90,196	$ 93,677	$ 56,883	$ 172,530	$ 163,617	$ 123,664	$ 262,726	$ 257,294	$ 180,547
Adjusted gross margin	*45.3 %*	*46.9 %*	*43.8 %*	*48.4 %*	*52.1 %*	*47.8 %*	*47.3 %*	*50.1 %*	*46.5 %*

We reported gross margins of 46.0% for fiscal year 2022 compared to 47.5% for fiscal year 2021, a decrease of 1.5 points. Gross margin decreased 1.7 percentage points in the Life Sciences Products segment and 1.4 percentage points in the Life Sciences Services segment for fiscal year 2022 compared to the prior fiscal year.

Our Life Sciences Products segment reported gross margins of 44.7% for fiscal year 2022 compared to 46.4% for fiscal year 2021. The contraction of gross margin by 1.7 percentage points was primarily due to unfavorable product mix and inflation during fiscal year 2022. Cost of revenue in fiscal year 2022 and 2021 both included $1.1 million, of amortization related to completed technology. Excluding these charges, adjusted gross margins contracted 1.7 percentage points in fiscal year 2022, compared to fiscal year 2021. Please refer to Note 18, “Segment and Geographic Information”.

Our Life Sciences Services segment reported gross margins of 46.7% for fiscal year 2022 compared to 48.2% for fiscal year 2021. The reduction of 1.4 points was driven by higher costs due to a buildout of our facilities infrastructure and the effects of currency and inflation during fiscal year 2022. Cost of revenue during fiscal year 2022 included $6.2 million of amortization related to completed technology as compared to $7.0 million incurred during fiscal year 2021. Cost of revenue for fiscal year 2021 included $5.4 million of tariff related charges. Excluding the impact of the amortization related to completed technology and tariff charges, as described above, adjusted gross margins decreased 3.7 percentage points in fiscal year 2022, as compared to fiscal year 2021. Please refer to Note 18, “Segment and Geographic Information”.

Research and Development Expenses

Our research and development expense for the twelve months ended September 30, 2022, 2021, and 2020 is as follows:

	Year Ended September 30,		
Dollars in thousands	2022	2021	2020
Life Sciences Products	$ 14,633	$ 10,866	$ 8,740
Percent Revenue	2.6 %	2.1 %	2.2 %
Life Sciences Services	$ 12,909	$ 11,523	$ 9,067
Percent Revenue	2.3 %	2.2 %	2.3 %
Corporate	$ —	$ 23	$ 11
Percent Revenue	— %	0.0 %	0.0 %
Total research and development expense	$ 27,542	$ 22,412	$ 17,818
Percent Revenue	5.0 %	4.4 %	4.6 %

Research and development expenses in fiscal year 2022 increased $5.1 million as compared fiscal year 2021, driven by a $3.8 million increase in our Life Sciences Products segments and a $1.4 million increase in our Life Sciences Services segment.

Research and development expenses in our Life Sciences Products segment increased $3.8 million in fiscal year 2022 compared to fiscal year 2021. The increase in research and development expenses were primarily related to continued investment in automated stores, cryogenic stores, and operations associated with the Barkey acquisition.

Research and development expenses in our Life Sciences Services segment increased $1.4 million in fiscal year 2022 compared to fiscal year 2021. The increase in research and development expenses was primarily driven by higher investments in our genomics services business.

Selling, General and Administrative Expenses

Our selling, general and administrative expenses for the twelve months ended September 30, 2022, 2021, and 2020 is as follows:

	Year Ended September 30,		
Dollars in thousands	**2022**	**2021**	**2020**
Life Sciences Products	$ 63,408	$ 59,723	$ 51,184
Percent Revenue	*11.4 %*	*11.6 %*	*13.2 %*
Life Sciences Services	$ 142,830	$ 129,398	$ 111,737
Percent Revenue	$ *25.7 %*	$ *25.2 %*	$ *28.8 %*
Corporate	$ 45,827	$ 62,980	$ 27,335
Percent Revenue	*8.2 %*	*12.3 %*	*7.0 %*
Total selling, general and administrative expense	$ 252,065	$ 252,101	$ 190,256
Percent Revenue	*45.4 %*	*49.1 %*	*49.0 %*

Total selling, general and administrative expenses were flat in fiscal year 2022 as compared to fiscal year 2021, driven by an increase of $17.1 million from segment selling, general and administrative expenses and a decrease of $17.2 million from corporate expenses not allocated to our segments. The segment selling, general and administrative expenses are discussed in further detail below.

The decrease in unallocated corporate expenses in fiscal year 2022 compared to the prior fiscal year was primarily due to $13.4 million of impairment charges to intangible assets related to tradenames recorded in 2021. Merger and acquisition related expenses decreased by $2.7 million for fiscal year 2022 as compared to fiscal year 2021. Unallocated corporate expenses also include the amortization of intangible assets primarily related to customer relationships, which were $32.3 million for fiscal year 2022 and $37.4 million for fiscal year 2021.

Selling, general and administrative expenses at the segment level, which are discussed below, include corporate allocations from shared corporate functions which include finance, information technology, human resources, legal, executive, governance, logistics and compliance, and variable compensation. During fiscal year 2022 corporate allocated expenses decreased $17.2 million compared to fiscal year 2021, primarily due to lower variable compensation accruals.

Selling, general and administrative expenses in our Life Sciences Products segment increased $3.7 million in fiscal year 2022 as compared to fiscal year 2021, due to higher selling costs as we made investments in our commercial resources and capabilities.

Selling, general and administrative expenses in our Life Sciences Services segment increased $13.4 million in fiscal year 2022 as compared to fiscal year 2021 primarily due to selling costs as described above, and support personnel in our laboratories.

Non-Operating Income (Expenses)

Interest income – During fiscal years 2022 and 2021, we recorded interest income of $20.3 million and $0.6 million respectively, which primarily represented interest earned on our marketable securities. The increase in interest income in fiscal year 2022 from the prior fiscal year is due to interest earned on the proceeds from the sale of the semiconductor automation business, including interest accrued on a net investment hedge.

Interest expense – During fiscal years 2022 and 2021, we recorded interest expense of $4.6 million and $2.0 million, respectively. The interest expense for fiscal year 2022 is primarily related to interest on cash held in one of our German subsidiaries that is denominated in EUR, which carries a negative interest rate. Interest expense for fiscal year 2021 is primarily related to interest expense on our former term loan.

Other expenses, net – During fiscal years 2022 and 2021 we recorded other expenses, net of $0.3 million and $16.5 million, respectively. Other expense, net for fiscal year 2022 is primarily due to foreign exchange loss. Other expense, net for fiscal year 2021 includes a $16.0 million charge related to the release of a tax indemnification asset which is offset in the Income tax benefit line item in our Consolidated Statements of Operations.

Income Tax Provision (Benefit)

We recorded an income tax provision on continuing operations of $1.4 million in fiscal year 2022 compared to an income tax benefit of $20.1 million in fiscal year 2021. The changes were the result of fluctuations in global income from operations and one-time tax benefits recorded in the fiscal year 2021. The income tax provision for fiscal year 2022 was primarily driven by the tax provision on earnings in our foreign jurisdictions offset by the tax benefit on the losses in the United States on a continuing operations basis.

The income tax benefit during fiscal year 2021 was driven primarily by uncertain tax position reversals totaling $18.2 million, which includes $16.0 million of uncertain tax positions that were indemnified. The tax reserve reversal is offset by a $3.4 million tax charge related to the write off a future tax deduction that would have been recognized if the uncertain tax position was settled in an audit. The benefit also included $2.0 million of benefits related to the reversal of valuation allowances against deferred tax assets, losses in the U.S. jurisdiction and stock compensation deductions in excess of book expenses. The overall benefit for fiscal year 2021 was partially offset by $4.1 million of withholding tax costs related to repatriation of foreign earnings in connection with the planned sale of the semiconductor automation business and the tax provision on earnings in our foreign jurisdictions during the year.

Discontinued Operations

Discontinued operations in fiscal years 2022 and 2021 consist of the semiconductor automation business. On February 1, 2022, the Company completed the sale of the semiconductor automation business for $2.9 billion in cash.

Revenue from discontinued operations was $264.4 million and $680.1 million, respectively, for fiscal years 2022 and 2021 related to the semiconductor automation business. Net income from discontinued operations was $2.1 billion and $139.6 million for fiscal years 2022 and 2021, respectively, and is comprised of the gain on the sale of the semiconductor business in fiscal year 2022, and results of operations of the semiconductor automation business in fiscal year 2021. The income from discontinued operations only includes direct operating expenses incurred that (1) are clearly identifiable as costs being disposed of upon completion of the sale and (2) will not be continued by our company on an ongoing basis. Indirect expenses which supported the semiconductor automation business and semiconductor cryogenics business, and which remained as part of the continuing operations, are not reflected in income from discontinued operations.

LIQUIDITY AND CAPITAL RESOURCES

We believe that we have adequate resources to satisfy our working capital, financing activities, debt service and capital expenditure requirements for the next twelve months. The current global economic environment, including the uncertainty related to the short and long-term impacts of the COVID-19 pandemic, make it difficult for us to predict

longer-term liquidity requirements with sufficient certainty. We may be unable to obtain any required additional financing on terms favorable to us, if at all. If adequate funds are not available to us on acceptable terms or otherwise, we may be unable to successfully develop or enhance products and services, respond to competitive pressure or take advantage of acquisition opportunities, any of which could have a material adverse effect on our business, financial condition and operating results.

The discussion of our cash flows and liquidity that follows does not include the impact of any adjustments to remove discontinued operations, unless otherwise noted, and is stated on a total company consolidated basis.

Overview of Cash Flows and Liquidity

Our cash and cash equivalents, restricted cash and marketable securities as of September 30, 2022 and 2021 consist of the following (in thousands):

	Year Ended September 30,	
	2022	2021
Cash and cash equivalents	$ 658,274	$ 227,427
Restricted cash	383,023	12,906
Short-term marketable securities	911,764	81
Long-term marketable securities	352,020	3,598
	$ 2,305,081	$ 244,012
Cash, cash equivalents and restricted cash	1,041,297	240,333
Cash and cash equivalents included in assets held for sale	—	45,000
	$ 1,041,297	$ 285,333

Our cash and cash equivalents, restricted cash and marketable securities were $2.3 billion as of September 30, 2022. As of September 30, 2022, we had cash, cash equivalents and restricted cash of $1.0 billion, of which $867.6 million was held outside of the United States and included $379 million of short-term restricted cash in Luxembourg as of September 30, 2022, to complete the purchase of B Medical on October 3, 2022. If the funds held outside the United States are needed for the United States operations, including for use in our recently approved share repurchase program, we would need to repatriate these funds. As a result of recent changes in U.S. tax legislation, any repatriation in the future would likely not result in U.S. federal income tax. Our intent is to reinvest our foreign cash outside of the United States and our current operating plans do not demonstrate a need to repatriate these funds for our U.S. operations. We had marketable securities of $1.3 billion and $3.7 million as of September 30, 2022 and 2021, respectively. Our marketable securities are generally readily convertible to cash without an adverse impact.

Fiscal Year Ended September 30, 2022 Compared to Fiscal Year Ended September 30, 2021

Overview

Cash Flows and Liquidity - Cash and cash equivalents and restricted cash as presented on our Consolidated Statements of Cash Flows is on a total company basis and were $1.0 billion as of September 30, 2022 compared to $285.3 million as of September 30, 2021. The increase of $0.8 billion was attributable to $1.5 billion of investing activities, including $2.9 billion of proceeds from the sale of the semiconductor automation business offset by $1.5 billion of investments in marketable securities, new acquisitions, and capital equipment; $63 million of cash outflow from financing activities, and $466 million of cash outflows from operating activities. The cash outflow from operating activities includes $431.6 million of taxes and $52.5 million of fees related to the sale of the semiconductor automation business. The effects of foreign exchange positively impacted the annual change in balances by $180.8 million.

Divestiture and Extinguishment of Debt

On February 1, 2022, we completed the sale of our semiconductor automation business for $2.9 billion in cash. Net cash proceeds from the divestiture were $2.5 billion after estimated taxes payable and other items, such as closing costs. Upon closure of the sale on February 1, 2022, we utilized $49.7 million of proceeds to extinguish outstanding debt

related to our term loan. We also terminated our revolving line of credit, which had no borrowings outstanding. As of September 30, 2022, we have no outstanding debt on our balance sheet.

Operating Activities

Cash flows from operating activities can fluctuate significantly from period to period as earnings, working capital needs and the timing of payments for income taxes, restructuring activities and other charges impact reported cash flows.

Cash outflows from operating activities of $466 million for the fiscal year ended September 30, 2022, resulted from net income of $2.1 billion, adjusted to exclude the effect of non operating items of $2.5 billion, and an increase in net operating assets of $507 million. This includes $431.6 million of taxes and $52.5 million of fees related to the sale of the semiconductor automation business. $72.1 million of cash outflows from the increase in net operating assets were primarily driven by increases in accounts receivable, inventory, and prepaids and other assets partially offset by increases in accrued expenses, and accrued compensation and tax withholdings.

Cash flows from operating activities of $149.9 million for the fiscal year ended September 30, 2021, resulted from net income of $110.7 million, adjusted to exclude the effect of non-cash operating charges of $90.3 million, partially offset by an increase in net operating assets of $51.2 million. Cash outflows related to the increase in net operating assets were primarily driven by increases in accounts receivable, inventory, and decreases in accrued expenses and other liabilities, partially offset by increased accrued compensation and tax withholdings.

Discontinued operations contributed $2.1 billion of net income to fiscal year 2022 and $139.6 million of net income to fiscal year 2021 referenced above.

Investing Activities

Cash flows provided by investing activities consist primarily of proceeds from divestitures, cash used for acquisitions, capital expenditures and purchase of marketable securities as well as cash proceeds generated from sales and maturities of marketable securities. Cash provided by investing activities was $1.5 billion during fiscal year 2022 and consisted of $2.9 billion of proceeds from the sale of the semiconductor automation business on February 1, 2022, net of the cash transferred; offset by $125.9 million of acquisitions, $73.4 million of capital expenditures, and $1.3 billion of net investments in marketable securities. The acquisitions comprised the purchase of a technology intangible of $4 million related to the semiconductor automation business, $84 million for Barkey and $43 million to prepay the debt for the B Medical acquisition prior to September 30, 2022. Capital expenditures were made primarily to increase capacity, support new product development, and enhance information technology infrastructure.

Cash used in investing activities was $146.3 million during fiscal year 2021 and consisted of $95.5 million for capital expenditures and $52.8 million for acquisitions, partially offset by $2.0 million of net proceeds from the net purchases, sales, and maturities of marketable securities.

Financing Activities

Cash outflows for financing activities were $62.8 million for the year ended September 30, 2022 which primarily consisted of cash outflows of $49.7 million to extinguish the term loan, $10.4 million for the payments of acquisition related contingent consideration, $7.5 million related to dividend payments, $0.4 million payment of finance leases, partially offset by $5.2 million of proceeds from the issuance of common stock.

Cash used for financing activities was $25.9 million during fiscal year 2021 and included net cash outflows for cash dividends paid of $29.7 million, $1.2 million in payment of finance leases and $0.8 million of debt principal payments. Partially offsetting these cash outflows was $5.8 million related to the proceeds from issuance of common stock.

China Facility

In April 2019, we committed to construct a facility in Suzhou China, to consolidate the Suzhou operations of our genomic services business and provide infrastructure to support future growth. The facility is being constructed in two phases. During the third fiscal quarter of 2022, we completed the construction of phase one of the facility. The total cost

transferred from construction in progress to fixed assets as of September 30, 2022 was $42.4 million, which includes $16.4 million and $26.0 million for fiscal years 2022 and 2021, respectively.

Capital Resources

Term Loans and Line of Credit

On October 4, 2017, we entered into a $200.0 million term loan with Morgan Stanley Senior Funding, Inc., JPMorgan Chase Bank, N.A. and Wells Fargo Securities, LLC pursuant to the terms of a credit agreement with the lenders. The term loan was issued at $197.6 million, or 98.8% of its par value, resulting in a discount of $2.4 million, or 1.2%, which represented loan origination fees paid at the closing.

On February 1, 2022, we settled the term loan using proceeds from the sale of the semiconductor automation business.

We also maintained a revolving line of credit with Wells Fargo Bank, N.A. and JPMorgan Chase Bank, N.A. that provided for a revolving credit facility of up to $75.0 million. On February 1, 2022, we also terminated the revolving line of credit, which had no borrowings outstanding.

Dividends

Our Board of Directors declared the following dividends during the fiscal years 2022 and 2021(in thousands, except per share data):

Declaration Date	Dividend per Share	Record Date	Payment Date	Total
Fiscal Year Ended September 30, 2022				
November 2, 2021	$ 0.10	December 3, 2021	December 23, 2021	$ 7,494
Fiscal Year Ended September 30, 2021				
November 5, 2020	$ 0.10	December 4, 2020	December 17, 2020	$ 7,421
January 25, 2021	0.10	March 5, 2021	March 26, 2021	7,429
April 27, 2021	0.10	June 4, 2021	June 25, 2021	7,430
August 3, 2021	0.10	September 3, 2021	September 24, 2021	7,435

Dividends are declared at the discretion of our Board of Directors and depend on actual cash flow from operations, our financial condition, debt service and capital requirements and any other factors our Board of Directors may consider relevant.

Since the completion of the sale of the semiconductor automation business on February 1, 2022, we have not paid a quarterly dividend and do not have plans to pay any dividends at this time.

Share Repurchase Program

On September 29, 2015, our Board of Directors approved a share repurchase program for up to $50 million of our common stock, or the 2015 Repurchase Program. On November 4, 2022, our Board of Directors terminated the 2015 Repurchase Program and approved a new share repurchase program authorizing the repurchase of up to $1.5 billion of our common stock, or the 2022 Repurchase Program. Repurchases under the 2022 Repurchase Program may be made in the open market or through privately negotiated transactions (including under an accelerated share repurchase, or ASR, agreement), or by other means, including through the use of trading plans intended to qualify under Rule 10b5-1 under the Securities Exchange Act of 1934, as amended, subject to market and business conditions, legal requirements, and other factors. We are not obligated to acquire any particular amount of common stock under the 2022 Repurchase Program, and share repurchases may be commenced or suspended at any time at our discretion. As part of the 2022 Repurchase Program, we expect to enter into an ASR agreement for the repurchase of up to $500 million of our common stock. There were no repurchases of our common stock during the fiscal year ended September 30, 2022.

Contractual Obligations and Requirements

At September 30, 2022, we had non-cancelable commitments of $66.6 million, including purchase orders for inventory of $55.6 million, and information technology related commitments of $10.9 million

As of September 30, 2022, the total amount of net unrecognized tax benefits for uncertain tax positions and the accrual for the related interest was $1.7 million, all of which represents a potential future cash outlay, in comparison to September 30, 2021 where the balance was $2.0 million. The decrease in the balance over the year was primarily driven by many of our accruals on our preexisting unrecognized tax benefits for uncertain tax positions reaching their statute of limitations. We are unable to make a reasonably reliable estimate of the timing of the cash settlement for these liabilities since the timing of future tax examinations by various tax jurisdictions and the related resolution is uncertain.

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

We are exposed to a variety of market risks, including changes in interest rates affecting the return on our cash and cash equivalents, restricted cash and short-term and long-term investments and fluctuations in foreign currency exchange rates.

Interest Rate Exposure

Our cash and cash equivalents and restricted cash consist principally of money market securities which are short-term in nature. At September 30, 2022 and 2021, our aggregate short-term and long-term investments were $1.3 billion and $3.7 million, respectively, and consisted mostly of highly rated corporate debt securities and municipal securities. At September 30, 2022, the unrealized loss position on marketable securities was $14.7 million, which is included in "Accumulated other comprehensive income" in the Consolidated Balance Sheets. At September 30, 2021, the unrealized loss position on marketable securities was insignificant. A hypothetical 100 basis point change in interest rates would result in an $11.4 million annual change in interest income earned in fiscal year 2022.

On February 1, 2022, in connection with the completion of the sale of its semiconductor automation business, we used $49.7 million of the cash proceeds from the sale to extinguish the total remaining outstanding balance of our former term loan. We also closed our revolving credit facility of which had no borrowings. During fiscal year 2022, we incurred cash interest expense of $0.5 million on the term loan. The term loan had a variable interest rate which subjected us to interest rate risk. Our primary interest rate risk exposure resulted from changes in the short-term LIBOR rate, the federal funds effective rate and the prime rate.

Currency Rate Exposure

We have transactions and balances denominated in currencies other than the functional currency of the transacting entity. Most of these transactions carrying foreign exchange risk are in Germany, the United Kingdom, and China. Sales in currencies other than the U.S. dollar were 36% and 37%, respectively, of our total sales for fiscal years ended September 30, 2022 and 2021. These sales were made primarily by our foreign subsidiaries, which have cost structures that substantially align with the currency of sale.

In the normal course of our business, we have liquid assets denominated in non-functional currencies which include cash, short-term advances between our legal entities and accounts receivable which are subject to foreign currency exposure. Such balances were approximately $80.4 million and $119.4 million, respectively, at September 30, 2022 and 2021, and relate to the foreign exchange risk in Germany, the United Kingdom, and China. We mitigate the impact of potential currency translation losses on these short-term intercompany advances by the timely settlement of each transaction, generally within 30 days. We also utilize forward contracts to mitigate our exposures to currency movement. We incurred foreign currency losses of $1.7 million and $1.8 million, respectively, in fiscal years 2022 and 2021, which related to the currency fluctuation on these balances between the time the transaction occurred and the ultimate settlement of the transaction.

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

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Azenta, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Azenta, Inc. and its subsidiaries (the "Company") as of September 30, 2022 and 2021, and the related consolidated statements of operations, of comprehensive income, of changes in stockholders' equity and of cash flows for each of the three years in the period ended September 30, 2022, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of September 30, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of September 30, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended September 30, 2022 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of September 30, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting 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 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, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements 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. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

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

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

Critical Audit Matters

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

Goodwill Impairment Assessments – Life Sciences Products and Life Sciences Services Reporting Units

As described in Notes 2 and 8 to the consolidated financial statements, the Company's consolidated goodwill balance was $513.6 million as of September 30, 2022, of which $154.6 million relates to the Life Sciences Products reporting unit and $359.0 million relates to the Life Sciences Services reporting unit. In the fourth quarter of 2022, the Company experienced a decline in the stock price resulting in the market capitalization being less than the carrying value. Management considered the decline in the market capitalization being less than the carrying value of the reporting units in the evaluation of goodwill impairment indicators and determined it appropriate to perform a quantitative assessment of both the reporting units as of September 30, 2022. Management determines fair values of the reporting units based on an income approach in accordance with the discounted cash flow method. Application of the goodwill impairment test requires judgment. Different assumptions of revenue growth rates, gross margin percentage, selling, general and administrative expense percentage, and the discount rate used in the discounted cash flow method could result in different estimates of the reporting unit's fair value as of each testing date.

The principal considerations for our determination that performing procedures relating to the goodwill impairment assessments of the Life Sciences Products and Life Sciences Services reporting units is a critical audit matter are (i) the significant judgment by management when developing the fair value estimates of the Life Sciences Products and Life Sciences Services reporting units; (ii) a high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating management's significant assumptions related to revenue growth rates, gross margin percentage, and the discount rate for the Life Sciences Products reporting unit and revenue growth rates, gross margin percentage, selling, general and administrative expense percentage, and the discount rate for the Life Sciences Services reporting unit; and (iii) the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the

effectiveness of controls relating to management's goodwill impairment assessments, including controls over the valuation of the Life Sciences Products and Life Sciences Services reporting units. These procedures also included, among others, (i) testing management's process for developing the fair value estimates of the reporting units; (ii) evaluating the appropriateness of the discounted cash flow methods; (iii) testing the completeness and accuracy of the underlying data used in the methods; and (iv) evaluating the reasonableness of the significant assumptions used by management related to revenue growth rates, gross margin percentage, and the discount rate for the Life Sciences Products reporting unit and revenue growth rates, gross margin percentage, selling, general and administrative expense percentage, and the discount rate for the Life Sciences Services reporting unit. Evaluating management's significant assumptions related to revenue growth rates and gross margin percentage for the Life Sciences Products reporting unit and revenue growth rates, gross margin percentage, and selling, general and administrative expense percentage for the Life Sciences Services reporting unit involved evaluating whether the assumptions used by management were reasonable considering (i) the current and past performance of the reporting units; (ii) consistency with external market and industry data; and (iii) whether the assumptions were consistent with evidence obtained in other areas of the audit. Professionals with specialized skill and knowledge were used to assist in evaluating (i) the appropriateness of the discounted cash flow methods and (ii) the reasonableness of the significant assumption related to the discount rates.

/s/ PricewaterhouseCoopers LLP
Boston, Massachusetts
November 25, 2022

We have served as the Company's auditor since 2016.

AZENTA, INC.
CONSOLIDATED BALANCE SHEETS

	September 30, 2022	September 30, 2021
Assets		
Current assets		
Cash and cash equivalents	$ 658,274	$ 227,427
Short-term marketable securities	911,764	81
Accounts receivable, net of allowance for expected credit losses ($5,162 and $4,318, respectively)	163,758	119,877
Inventories	85,544	60,398
Derivative asset	124,789	—
Short-term restricted cash	382,596	7,145
Prepaid expenses and other current assets	132,621	51,053
Current assets held for sale	—	311,385
Total current assets	2,459,346	777,366
Property, plant and equipment, net	154,470	130,719
Long-term marketable securities	352,020	3,598
Long-term deferred tax assets	1,169	10,043
Goodwill	513,623	469,356
Intangible assets, net	178,401	186,534
Other assets	57,093	58,068
Non-current assets held for sale	—	183,828
Total assets	$ 3,716,122	$ 1,819,512
Liabilities and stockholders' equity		
Current liabilities		
Accounts payable	$ 38,654	$ 42,360
Deferred revenue	39,748	25,724
Accrued warranty and retrofit costs	2,890	2,330
Accrued compensation and benefits	41,898	33,183
Accrued income taxes payable	28,419	8,711
Accrued expenses and other current liabilities	78,937	103,841
Current liabilities held for sale	—	128,939
Total current liabilities	230,546	345,088
Long-term debt	—	49,677
Long-term tax reserves	1,684	1,973
Long-term deferred tax liabilities	64,555	13,030
Long-term pension liabilities	261	705
Long-term operating lease liabilities	49,227	45,088
Other long-term liabilities	6,463	6,173
Non-current liabilities held for sale	—	32,444
Total liabilities	352,736	494,178
Commitments and contingencies (Note 16)		
Stockholders' equity		
Preferred stock, $0.01 par value - 1,000,000 shares authorized, no shares issued or outstanding	—	—
Common stock, $0.01 par value - 125,000,000 shares authorized, 88,482,125 shares issued and 75,020,256 shares outstanding at September 30, 2022, 87,808,922 shares issued and 74,347,053 shares outstanding at September 30, 2021	885	878
Additional paid-in capital	1,992,017	1,976,112
Accumulated other comprehensive income	(83,916)	19,351
Treasury stock, at cost - 13,461,869 shares at September 30, 2022 and September 30, 2021	(200,956)	(200,956)
Retained earnings (accumulated deficit)	1,655,356	(470,051)
Total stockholders' equity	3,363,386	1,325,334
Total liabilities and stockholders' equity	$ 3,716,122	$ 1,819,512

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

AZENTA, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended September 30,		
	2022	2021	2020
	(In thousands, except per share data)		
Revenue			
Products	$ 180,950	$ 181,036	$ 110,567
Services	374,548	332,667	277,970
Total revenue	555,498	513,703	388,537
Cost of revenue			
Products	100,044	96,678	62,715
Services	199,870	173,216	153,674
Total cost of revenue	299,914	269,894	216,389
Gross profit	255,584	243,809	172,148
Operating expenses			
Research and development	27,542	22,412	17,818
Selling, general and administrative	252,065	252,101	190,256
Restructuring charges	712	385	674
Total operating expenses	280,319	274,898	208,748
Operating loss	(24,735)	(31,089)	(36,600)
Interest income	20,286	632	849
Interest expense	(4,589)	(2,037)	(2,944)
Loss on extinguishment of debt	(632)	—	—
Other expenses	(266)	(16,475)	(1,597)
Loss before income taxes	(9,936)	(48,969)	(40,292)
Income tax provision (benefit)	1,350	(20,100)	(13,930)
Loss from continuing operations	(11,286)	(28,869)	(26,362)
Income from discontinued operations, net of tax	2,144,145	139,616	91,215
Net income	$ 2,132,859	$ 110,747	$ 64,853
Basic net (loss) income per share:			
Loss from continuing operations	$ (0.15)	$ (0.39)	$ (0.36)
Income from discontinued operations, net of tax	28.63	1.88	1.24
Basic net income per share	$ 28.48	$ 1.49	$ 0.88
Diluted net (loss) income per share:			
Loss from continuing operations	$ (0.15)	$ (0.39)	$ (0.36)
Income from discontinued operations, net of tax	28.63	1.88	1.24
Diluted net income per share	$ 28.48	$ 1.49	$ 0.88
Weighted average shares used in computing net income per share:			
Basic	74,897	74,229	73,557
Diluted	74,897	74,455	73,850

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

AZENTA, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Year Ended September 30,		
	2022	2021	2020
	(In thousands)		
Net income	$ 2,132,859	$ 110,747	$ 64,853
Other comprehensive (loss) income, net of tax:			
Foreign currency translation reclassification adjustments included in income from discontinued operations (Note 2)	(16,567)	—	—
Net investment hedge currency translation adjustment, net of tax effects of $31,769 for the fiscal year 2022	93,020	—	—
Foreign currency translation adjustments	(169,266)	(2,922)	18,877
Unrealized gain (losses) on marketable securities, net of tax effects of $(3,729), $0, and $0 for the fiscal year 2022, 2021, and 2020	(10,908)	—	7
Actuarial gains (losses), net of tax effects of ($121), ($77), and $27 for the fiscal years 2022, 2021, and 2020	454	354	(476)
Total other comprehensive (loss) income, net of tax	(103,267)	(2,568)	18,408
Comprehensive income	$ 2,029,592	$ 108,179	$ 83,261

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

AZENTA, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended September 30,		
	2022	2021	2020
		(In thousands)	
Cash flows from operating activities			
Net income	$ 2,132,859	$ 110,747	$ 64,853
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	53,702	65,333	65,496
Impairment of intangible assets	—	13,364	—
Stock-based compensation	10,666	27,456	16,317
Amortization of premium on marketable securities and deferred financing costs	(1,894)	225	233
Deferred income taxes	24,469	(17,265)	(5,407)
Loss on extinguishment of debt	632	—	—
(Gain) loss on disposals of property, plant and equipment	(21)	260	226
(Gain) loss on divestiture, net of tax	(2,130,265)	948	319
Fees paid stemming from divestiture	(52,461)	—	—
Taxes paid stemming from divestiture	(431,600)	—	(91,500)
Changes in operating assets and liabilities, net of acquisitions and divestiture:			
Accounts receivable	(31,397)	(69,643)	(18,755)
Inventories	(66,629)	(50,443)	(13,144)
Accounts payable	(3,926)	30,967	792
Deferred revenue	16,599	(3,939)	(139)
Accrued warranty and retrofit costs	303	54	760
Accrued compensation and tax withholdings	11,404	7,298	11,097
Other current assets and liabilities	1,513	34,495	6,718
Net cash (used in) provided by operating activities	(466,046)	149,857	37,866
Cash flows from investing activities			
Purchases of property, plant and equipment	(73,435)	(52,805)	(39,924)
Purchases of technology intangibles	(4,000)	—	—
Purchases of marketable securities	(1,975,599)	(151)	(10,894)
Sales and maturities of marketable securities	705,384	121	44,820
Proceeds from divestiture, net of cash transferred	2,939,116	—	—
Adjustment to proceeds from divestiture		(1,802)	—
Acquisitions, net of cash acquired	(125,876)	(93,712)	(15,744)
Settlement (issuance) of note receivables	—	2,000	(1,000)
Net cash provided by (used in) investing activities	1,465,590	(146,349)	(22,742)
Cash flows from financing activities			
Proceeds from issuance of common stock	5,245	5,812	4,595
Principal payments on debt	(49,725)	(828)	(828)
Payments of finance leases	(388)	(1,164)	(1,277)
Payment for contingent consideration related to acquisition	(10,400)	—	—
Common stock dividends paid	(7,494)	(29,726)	(29,513)
Net cash used in financing activities	(62,762)	(25,906)	(27,023)
Effects of exchange rate changes on cash and cash equivalents	(180,819)	5,205	9,254
Net increase (decrease) in cash, cash equivalents and restricted cash	755,963	(17,193)	(2,645)
Cash, cash equivalents and restricted cash, beginning of period	285,333	302,526	305,171
Cash, cash equivalents and restricted cash, end of period	$ 1,041,296	$ 285,333	$ 302,526
Supplemental disclosures:			
Cash paid for interest	$ 469	$ 1,435	$ 2,159
Cash paid for income taxes, net	452,461	38,020	102,010
Reconciliation of cash, cash equivalents, and restricted cash to the consolidated balance sheets			
	September 30, 2022	September 30, 2021	September 30, 2020
Cash and cash equivalents of continuing operations	$ 658,274	$ 227,427	$ 250,649
Cash and cash equivalents included in assets held for sale	—	45,000	45,000
Short-term restricted cash	382,596	7,145	3,567
Long-term restricted cash included in other assets	426	5,761	3,310
Total cash, cash equivalents and restricted cash shown in the consolidated statements of cash flows	$ 1,041,296	$ 285,333	$ 302,526

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

AZENTA, INC.
CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY

	Common Stock Shares	Common Stock at Par Value	Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Retained Earnings	Treasury Stock	Total Stockholders' Equity
				(In thousands, except share data)			
Balance September 30, 2019	85,759,700	857	1,921,954	3,511	(586,412)	(200,956)	1,138,954
Shares issued under restricted stock and purchase plans, net	1,534,010	16	4,579				4,595
Stock-based compensation			16,317				16,317
Common stock dividends declared, at $0.40 per share					(29,513)		(29,513)
Net income					64,853		64,853
Foreign currency translation adjustments				18,877			18,877
Changes in unrealized losses on marketable securities, net of tax effects of $0				7			7
Actuarial loss arising in the year, net of tax effects of $27				(476)			(476)
Balance September 30, 2020	87,293,710	873	1,942,850	21,919	(551,072)	(200,956)	1,213,614
Shares issued under restricted stock and purchase plans, net	515,212	5	5,806				5,811
Stock-based compensation			27,456				27,456
Common stock dividends declared, at $0.40 per share					(29,726)		(29,726)
Net income					110,747		110,747
Foreign currency translation adjustments				(2,922)			(2,922)
Changes in unrealized losses on marketable securities, net of tax effects of $0				—			—
Actuarial loss arising in the year, net of tax effects of ($77)				354			354
Balance September 30, 2021	87,808,922	878	1,976,112	19,351	(470,051)	(200,956)	1,325,334
Shares issued under restricted stock and purchase plans, net	673,203	7	5,239				5,246
Stock-based compensation			10,666				10,666
Common stock dividends declared, at $0.10 per share					(7,494)		(7,494)
Net income					2,132,859		2,132,859
Unrealized gain on derivative asset, net of tax effect of $31,769				93,020			93,020
Foreign currency translation adjustments reclassed out of accumulated other comprehensive income related to discontinued operations				(16,567)			(16,567)
Foreign currency translation adjustments				(169,266)			(169,266)
Changes in unrealized losses on marketable securities, net of tax effects of ($3,729)				(10,908)			(10,908)
Actuarial loss arising in the year, net of tax effects of $121				454			454
Other					42		42
Balance September 30, 2022	88,482,125	$ 885	$ 1,992,017	$ (83,916)	$ 1,655,356	$ (200,956)	$ 3,363,386

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

AZENTA, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Nature of the Operation

Azenta, Inc. ("Azenta", or the "Company") is a leading global provider of life science sample exploration and management solutions for the life sciences market. The Company supports its customers from research to clinical development with its sample management, automated storage, and genomic services expertise to help bring impactful therapies to market faster.

Discontinued Operations

In the fourth quarter of fiscal year 2021, the Company entered into a definitive agreement to sell its semiconductor automation business to Thomas H. Lee Partners, L.P. ("THL"). The Company determined that the semiconductor automation business met the "held for sale" criteria and the "discontinued operations" criteria in accordance with Financial Accounting Standard Boards ("FASB") Accounting Standards Codification ("ASC") 205, *Presentation of Financial Statements*, ("FASB ASC 205") as of September 30, 2021. Please refer to Note 3, "Discontinued Operations" for further information about the discontinued businesses. The Consolidated Balance Sheets and Consolidated Statements of Operations, and the notes to the Consolidated Financial Statements were restated for all periods presented to reflect the discontinuation of the semiconductor automation business and the semiconductor cryogenics business in accordance with FASB ASC 205. The discussion in the notes to these Consolidated Financial Statements, unless otherwise noted, relate solely to the Company's continuing operations.

On February 1, 2022, the Company completed the sale of the semiconductor automation business for $2.9 billion in cash.

Risks and Uncertainties

The Company is subject to risks common to companies in the markets it serves, including, but not limited to, global economic and financial market conditions, fluctuations in customer demand, acceptance of new products, development by its competitors of new technological innovations, risk of disruption in its supply chain, the implementation of tariffs and export controls, inflation, dependence on key personnel, protection of proprietary technology, and compliance with domestic and foreign regulatory authorities and agencies.

Throughout the pandemic, the Company's operations have not been significantly interrupted as the Company has adapted to having required employees on site and the balance of employees mostly working from home. The Company has followed government guidance in each region and has implemented the U.S. Centers for Disease Control and Prevention social distancing guidelines and other best practices to protect the health and safety of the Company's employees. The COVID-19 pandemic has not had a substantial negative impact on the Company's financial results and a portion of this impact has been mitigated by the Company's realignment of resources to satisfy incremental orders related to virus research and vaccine development and commercialization. Future impacts of COVID-19 on the Company's financial results are not fully determinable, as the full impact of the pandemic on the economy and markets which the Company serves is as yet unknown, but will be dependent, in part, on future variants of the virus and vaccine effectiveness against these variants and new or prolonged government responses to the pandemic. The Company's financial results will also depend on variables including reduced demand from its customers, the degree that the supply chain may be constrained which could impact its delivery of products and services and the potential negative impact on its operations if there is an outbreak among the Company's employees, as well as the amount of incremental demand caused by research and treatments in the areas of COVID-19 or related threats.

2. Summary of Significant Accounting Policies

Principles of Consolidation and Basis of Presentation

The accompanying Consolidated Financial Statements include the accounts of the Company and its majority-owned subsidiaries and have been prepared in accordance with accounting principles generally accepted in the United States ("GAAP"). All intercompany balances and transactions have been eliminated in consolidation.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make certain estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported amounts of revenue and expenses during the reporting period. Significant estimates are associated with recording accounts receivable, inventories, goodwill, intangible assets other than goodwill, long-lived assets, derivative financial instruments, deferred income taxes, revenue over time, and stock-based compensation expense. The Company assesses the estimates on an ongoing basis and records changes in estimates in the period they occur and become known. Actual results could differ from these estimates.

The full extent to which the COVID-19 pandemic will directly or indirectly impact the Company's business, including results of operations and financial condition, will depend on future developments that are highly uncertain. This includes results from new information that may emerge concerning COVID-19 and any actions taken to contain or treat COVID-19, as well as the economic impact on local, regional, national and international customers and markets. The Company has made estimates of the impact of COVID-19 within its financial statements and there may be changes to those estimates in future periods.

Business Combinations

The Company accounts for business acquisitions using the purchase method of accounting, in accordance with which assets acquired and liabilities assumed are recorded at their respective fair values at the acquisition date. The fair value of the consideration paid, including contingent consideration, is assigned to the assets acquired and liabilities assumed based on their respective fair values. Goodwill represents the excess of the purchase price over the estimated fair values of the assets acquired and liabilities assumed.

Significant judgment is used in determining fair values of assets acquired and liabilities assumed and contingent consideration, as well as intangibles and their estimated useful lives. Fair value and useful life determinations may be based on, among other factors, estimates of future expected cash flows and appropriate discount rates used in computing present values. These judgments may materially impact the estimates used in allocating acquisition date fair values to assets acquired and liabilities assumed, as well as our current and future operating results. Actual results may vary from these estimates that may result in adjustments to goodwill and acquisition date fair values of assets and liabilities during a measurement period or upon a final determination of asset and liability fair values, whichever occurs first. Adjustments to fair values of assets and liabilities made after the end of the measurement period are recorded within our operating results.

Changes in the fair value of contingent consideration resulting from a change in the underlying inputs are recognized in results of operations until the arrangement is settled.

Foreign Currency Translation

Certain transactions of the Company and its subsidiaries are denominated in currencies other than their functional currency. Foreign currency exchange gains (losses) generated from the settlement and remeasurement of these transactions are recognized in earnings and presented within "Other income (expenses), net" in the Company's Consolidated Statements of Operations. Net foreign currency transaction and remeasurement losses totaled $1.7 million, $1.8 million and $3.4 million for the fiscal years ended September 30, 2022, 2021 and 2020, respectively.

The determination of the functional currency of the Company's subsidiaries is based on their financial and operational environment and is the local currency of all of the Company's foreign subsidiaries. The subsidiaries' assets

and liabilities are translated into the reporting currency at period-end exchange rates, while revenue, expenses, gains and losses are translated at the average exchange rates during the period. Gains and losses from foreign currency translations are recorded in "Accumulated other comprehensive income" in the Company's Consolidated Balance Sheets and presented as a component of comprehensive income in the Company's Consolidated Statements of Comprehensive Income.

The semiconductor automation business had foreign operations which had a cumulative translation adjustment balance of $16.6 million at the date of disposal of this business. This amount was removed from 'Accumulated other comprehensive income" in the Company's Consolidated Balance Sheet during the three months ended March 31, 2022, and included within the gain on the sale of the semiconductor automation business in "Income from discontinued operations, net of tax" in the Company's Consolidated Statement of Operations. As a result, the Company presented a $16.6 million reclassification adjustment in "Accumulated other comprehensive income" in the Company's Consolidated Balance Sheet at September 30, 2022.

Derivative Financial Instruments

The Company has transactions and balances denominated in currencies other than the functional currency of the transacting entity. Most of these transactions carry foreign exchange risk are in Germany, the United Kingdom and China. The Company enters into foreign exchange contracts to reduce its exposure to currency fluctuations. The arrangements typically mature in three months or less and they do not qualify for hedge accounting. Net gains and losses related to these contracts are recorded as a component of "Other income (expenses), net" in the accompanying Consolidated Statements of Operations and are as follows for the fiscal years ended September 30, 2022, 2021 and 2020 (in thousands):

	Fiscal Year Ended September 30,		
	2022	2021	2020
Realized gains (losses) on derivatives not designated as hedging instruments	$ 991	$ (7,781)	$ (2,671)

The fair values of the forward contracts are recorded in the accompanying Consolidated Balance Sheets as "Prepaid expenses and other current assets" and "Accrued expenses and other current liabilities". Foreign exchange contract assets and liabilities are measured and reported at fair value based on observable market inputs and classified within Level 2 of the fair value hierarchy described in fair value measurements in Footnote 19, due to a lack of an active market for these contracts.

Hedging Activities

On February 1, 2022, the Company entered into a cross-currency swap agreement to hedge the variability of exchange rate impacts between the United States dollar and the Euro. Under the terms of the cross-currency swap agreement, the Company notionally exchanged approximately $1.03 billion for approximately €915 million at a weighted average interest rate of approximately 1.196%. The designated notional amount is $960 million and the actual interest rate is 1.283%. 1.283% was in the range of the market value for that day and is the true interest rate on the notional amount. This cross-currency swap agreement expires in February 2023. The Company has designated the cross-currency swap as a hedge of net investments against one of our Euro denominated subsidiaries which requires an exchange of the notional amounts at maturity. At the maturity of the cross currency-swap, the Company will deliver a notional amount of €852 million and receive a notional amount of $960 million at an exchange rate of 1.1261.

This cross-currency swap is marked to market at each reporting period, representing the fair values of the cross-currency swap and any changes in fair value are recognized as a component of "Accumulated other comprehensive items, net", on the Consolidated Statements of Comprehensive Income. Interest accrued on the cross-currency swap is recorded within "Interest income" on the Consolidated Statements of Operations. For the fiscal year ended September 30, 2022, the Company recorded an unrealized gain in the derivative asset of $124.8 million, which is $93 million net of

taxes, to “Accumulated other comprehensive income” and recorded “Interest income” of $8.2 million, on this instrument for fiscal year ended September 30, 2022.

All derivatives, whether designated as a hedging relationship or not, are recorded in the Consolidated Balance Sheets at fair value. The accounting for changes in fair value of a derivative instrument depends on whether it has been designated and qualifies as part of a hedging relationship and the type of hedging relationship. For those derivative instruments that are designated and qualify as hedging instruments, the Company must designate the hedging instrument as a fair value hedge, cash flow hedge or a hedge of a net investment in a foreign operation based on the exposure being hedged. Certain derivatives held by the Company are not designated as hedges but are used in managing exposure to changes in foreign exchange rates.

A fair value hedge is a derivative instrument designated for the purpose of hedging the exposure to changes in fair value of an asset or a liability resulting from a particular risk. If the derivative is designated as a fair value hedge, the changes in the fair value of the derivative and of the hedged item attributable to the hedged risk are both recognized in the results of operations and presented in the same caption in the Consolidated Statements of Operations and Consolidated Statements of Comprehensive Income.

A cash flow hedge is a derivative instrument designated for the purpose of hedging the exposure to variability in future cash flows resulting from a particular risk. If the derivative is designated as a cash flow hedge, the effective portions of changes in the fair value of the derivative are recorded in accumulated other comprehensive income and recognized in the results of operations when the hedged item affects earnings. Ineffective portions of changes in the fair value of cash flow hedges are recognized in the results of operations.

A hedge of a net investment in a foreign operation is achieved through a derivative instrument designated for the purpose of hedging the exposure of changes in value of investments in foreign subsidiaries. If the derivative is designated as a hedge of a net investment in a foreign operation, the effective portions of changes in the fair value of the derivative are recorded in other comprehensive income as a part of the foreign currency translation adjustment. Ineffective portions of net investment hedges are recognized in the results of operations.

For derivative instruments not designated as hedging instruments, changes in fair value are recognized in the Consolidated Statements of Operations as gains or losses consistent with the classification of the underlying risk.

Concentration of Credit Risk

Financial instruments that potentially subject the Company to concentrations of credit risk consist of cash deposits and cash equivalents, marketable securities, derivative instruments and accounts receivable. All of the Company’s cash and cash equivalents, restricted cash, marketable securities and derivative instruments are maintained by major financial institutions.

The Company invests cash not used in operations in investment grade, high credit quality securities in accordance with the Company’s investment policy which provides guidelines and limits regarding investments type, concentration, credit quality and maturity terms aimed at maintaining liquidity and reducing risk of capital loss.

The Company regularly monitors the creditworthiness of its customers and believes that it has adequately provided for exposure to potential credit losses. The Company’s ten largest customers accounted for approximately 20%, 19% and 19% of its consolidated revenue for the fiscal years ended September 30, 2022, 2021 and 2020, respectively. No customers accounted for more than 10% of the Company’s consolidated revenue for fiscal years 2022, 2021 and 2020.

Fair Value Measurements

The Company measures certain financial assets and liabilities, including cash equivalents, available for sale securities, accounts receivable, accounts payable, and derivative instruments at fair value. FASB ASC 820, Fair Value Measurement and Disclosures, establishes a fair value hierarchy that requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. Available for sale securities and derivative instruments are measured at fair value based on quoted market prices or observable inputs other than

quoted market prices for identical or similar assets or liabilities. The carrying amounts of cash equivalents, accounts receivable and accounts payable approximate their fair value due to their short-term nature.

Cash and Cash Equivalents, and Restricted Cash

Cash and cash equivalents consist of cash and highly liquid investments with original maturities of three months or less that are readily convertible to known amounts of cash. At September 30, 2022 and 2021, cash equivalents were $374.8 million and $0.1 million, respectively. Cash equivalents are reported at fair value.

The Company classifies long-term restricted cash balances within “Other assets” on the accompanying Consolidated Balance Sheets based upon the term of the remaining restrictions.

Accounts Receivable, Allowance for Expected Credit Losses

Trade accounts receivable do not bear interest and are recorded at the invoiced amount. The Company maintains an allowance for expected credit losses representing its best estimate of expected credit losses related to its existing accounts receivable and their net realizable value. The Company determines the allowance based on a number of factors, including an evaluation of customer credit worthiness, the age of the outstanding receivables, economic trends, historical experience, and other information over the payment periods. The Company reviews and adjusts the allowance for expected credit losses on a quarterly basis. Accounts receivable balances are written off against the allowance for expected credit losses when the Company determines that the balances are not recoverable. Provisions for expected credit losses are recorded in “Selling, general and administrative” expenses in the Consolidated Statements of Operations. The Company does not have any off-balance-sheet credit exposure related to its customers.

Inventories

Inventories are stated at the lower of cost or net realizable value determined on a first-in, first-out basis and include the cost of materials, labor and manufacturing overhead. The Company reports inventories at their net realizable value and provides reserves for excess, obsolete or damaged inventory based on changes in customer demand, technology and other economic factors.

Fixed Assets, Intangible Assets and Impairment of Long-lived Assets

Property, plant and equipment are stated at cost, net of accumulated depreciation. Depreciation expense is computed based on the straight-line method and charged to results of operations to allocate the cost of the assets over their estimated useful lives, as follows:

Buildings	10 - 40 years
Computer equipment and software	3 - 7 years
Machinery and equipment	2 - 10 years
Furniture and fixtures	3 - 10 years

Leasehold improvements are amortized over the shorter of their estimated useful lives or the remaining terms of the respective leases. Equipment used for demonstrations to customers is included in machinery and equipment and depreciated over its estimated useful life. Repair and maintenance costs are expensed as incurred.

The Company has developed software for internal use. Internal and external labor costs incurred during the application development stage of a project are capitalized. Costs incurred prior to application development and post implementation are expensed as incurred. Training and data conversion costs are expensed as incurred. As of September 30, 2022, and 2021, the Company had cumulative capitalized direct costs of $26.9 million and $22.7 million, respectively, associated with the development of software for its internal use. As of September 30, 2022, this balance included $8.6 million associated with software still in the development stage which are included within "Property, plant and equipment, net" in the accompanying Consolidated Balance Sheets. During fiscal year 2022, the Company capitalized direct costs of $4.2 million associated with the development of software for its internal use.

Cost of disposed assets and the associated accumulated depreciation are derecognized upon their retirement or at the time of disposal, and the resulting gain or loss is included in the Company's results of operations.

The Company identified finite-lived intangible assets other than goodwill as a result of acquisitions. Finite-lived intangible assets are valued based on estimated future cash flows and amortized over their estimated useful lives based on methods that approximate the pattern in which the economic benefits are expected to be realized.

Finite-lived intangibles assets and fixed assets are tested for impairment when indicators of impairment are present. For purposes of this test, long-lived assets are grouped with other assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. If the Company determines that indicators of potential impairment are present, it assesses the recoverability of long-lived asset group by comparing its undiscounted future cash flows to its carrying value. The future cash flow period is based on the future service life of the primary asset within the long-lived asset group. If the carrying value of the long-lived asset group exceeds its future cash flows, the Company determines fair values of the individual net assets within the long-lived asset group to assess potential impairment. If the aggregate fair values of the individual net assets of the group are less than their carrying values, an impairment loss is recognized for an amount in excess of the group's aggregate carrying value over its fair value. The loss is allocated to the assets within the group based on their relative carrying values, with no asset reduced below its fair value.

Finite-lived intangible assets are amortized over their useful lives, as follows:

Trademarks	3 - 13 years
Patents	7 years
Completed technology	7 - 20 years
Customer relationships	6 - 14 years

Leases

The Company has operating leases for real estate and non-real estate and finance leases for non-real estate. The classification of a lease as operating or finance and the determination of the right-of-use asset ("ROU asset") and lease liability are determined at lease inception. The ROU asset represents the Company's right to use an underlying asset for the lease term and the lease liability represents the Company's obligation to make lease payments arising from the lease. Operating lease ROU assets and liabilities are recognized at the commencement date of the lease based on the present value of lease payments over the lease term. As most of the Company's leases do not provide an implicit rate, an incremental borrowing rate is used based on the estimated rate of interest for collateralized borrowing over a similar term of the lease payments at commencement date. Lease terms may include options to extend or terminate the lease when it is reasonably certain that the option will be exercised. Lease expense is recognized on a straight-line basis over the lease term.

The Company's lease agreements may contain lease and non-lease components. Non-lease components primarily include payments for maintenance and utilities. Fixed payments for non-lease components are combined with lease payments and accounted for as a single lease component which increases the amount of the ROU asset and liability.

The ROU asset for operating leases is included within Other assets and the ROU asset for finance leases is included within "Property, plant, and equipment, net' on the Consolidated Balance Sheets. The short-term lease liabilities for both operating leases and finance leases are included within 'Accrued expenses and other current liabilities" on the Consolidated Balance Sheets. The long-term lease liabilities for operating leases and finance leases are included within 'Long-term operating lease liabilities", and "Other long-term liabilities", respectively, on the Consolidated Balance Sheets.

Goodwill

Goodwill represents the excess of purchase price over the fair value of net tangible and identifiable intangible assets of the businesses acquired by the Company. Goodwill is tested for impairment annually or more often if impairment indicators are present at the reporting unit level. The Company has elected April 1st as its annual goodwill impairment

assessment date. If the existence of events or circumstances indicates that it is more likely than not that fair values of the reporting units are below their carrying values, the Company performs additional impairment tests during interim periods to evaluate goodwill for impairment.

Application of the goodwill impairment test requires significant judgment based on market and operational conditions at the time of the evaluation, including management's best estimate of future business activity and the related estimates of future cash flows from the assets and the reporting units that include the associated goodwill. These periodic evaluations could cause management to conclude that impairment factors exist, requiring an adjustment of these assets to their then-current fair market values. Future business conditions and/or activity could differ materially from the projections made by management which could result in additional adjustments and impairment charges.

The goodwill impairment test is performed at the reporting unit level. A reporting unit is either an operating segment or one level below it, which is referred to as a "component". The level at which the impairment test is performed requires an assessment of whether the operations below an operating segment constitute a self-sustaining business, in which case testing is generally performed at this level.

In accordance with ASC 350, *Intangibles- Goodwill and Other* ("ASC 350"), the Company first assesses qualitative factors to determine whether the existence of events or circumstances indicates that it is more likely than not that the fair value of a reporting unit is less than its carrying value. If the Company determines, based on this assessment, that it is more likely than not that the fair value of the reporting unit is less than its carrying value, it performs a quantitative goodwill impairment test by comparing the reporting unit's fair value with its carrying value. An impairment loss is recognized for the amount by which the reporting unit's carrying value exceeds its fair value, up to the total amount of goodwill allocated to the reporting unit.

We determine fair values of our reporting units based on an income approach in accordance with the discounted cash flow method, or DCF Method. The DCF Method is based on projected future cash flows and terminal value estimates discounted to their present values. Terminal value represents a present value an investor would pay on the valuation date for the rights to the cash flows of the business for the years subsequent to the discrete cash flow projection period. We consider the DCF Method to be the most appropriate valuation technique since it is based on management's long-term financial projections. In addition to determining the fair value of our reporting units based on the DCF Method, we also compare the aggregate values of our net corporate assets and reporting unit fair values to our overall market capitalization and use certain market-based valuation techniques to assess the reasonableness of the reporting unit fair values determined in accordance with the DCF Method. The key inputs used in the DCF Method include revenue growth rates, gross margin percentage, selling, general and administrative expense percentage and discount rates that are at or above our weighted-average cost of capital. We derive discount rates that are commensurate with the risks and uncertainties inherent in the respective reporting units and our internally developed projections of future cash flows.

Application of the goodwill impairment test requires judgment based on market and operational conditions at the time of the evaluation, including management's best estimates of the reporting unit's future business activity and the related estimates and assumptions of future cash flows from the assets that include the associated goodwill. Different assumptions of revenue growth rates, gross margin percentage, selling, general and administrative expense percentage and the discount rate used in the DCF Method could result in different estimates of the reporting unit's fair value as of each testing date.

In the fourth quarter of 2022, the Company experienced a decline in its stock price resulting in the total market value of our shares of stock outstanding (our market capitalization), being less than the carrying value of its reporting units. Therefore, as of September 30, 2022, the Company assessed several events and circumstances that could affect the significant inputs used to determine the fair value of our reporting units, including the significance of the amount of excess fair value over carrying value, updates to operating margins and cash flows, and the overall change in the economic climate. The Company considered the decline in the market capitalization being less than the carrying value of its reporting units in its evaluation of goodwill impairment indicators and determined it appropriate to perform a quantitative assessment of both its reporting units as of September 30, 2022. The Company's valuation was based on the DCF method described above. The Company concluded that there was no impairment, as the estimated fair value of the segments exceeded their carrying value.

In the event the financial performance of either of the two segments does not meet our expectations in the future, The Company experiences a prolonged macro or market downturn, or there are other negative revisions to key assumptions, in the DCF Method, the Company may be required to perform additional impairment analyses and could be required to recognize a non-cash impairment charge.

Warranty Obligations

The Company offers warranties on the sales of certain of its products and records warranty obligations for estimated future claims at the time revenue is recognized. Warranty obligations are estimated based on historical experience and management's estimate of the level of future claims.

Revenue Recognition

The Company generates revenue from the following sources:

- Products, including sales of automated cold sample management systems, consumables, instruments, spare parts, and software.
- Services, including repairs, upgrades, diagnostic support, installation, as well as biological sample services such as DNA sequencing, gene synthesis, molecular biology, bioinformatics, biological sample storage, sample acquisition and other support services.

The Company recognizes revenue for the transfer of such promised products or services to customers in an amount that reflects the consideration to which the Company expects to be entitled to in exchange for those products or services. Under ASC 606, *Revenue from Contracts with Customers* ("ASC 606"), revenue is recognized when or as the transfer of control of the underlying performance obligation occurs. To determine the amount of consideration the Company expects to be entitled to and whether transfer of control has occurred, the Company applies the following five-step model:

- *Identify the contract with a customer.* Contracts are accounted for when approval and commitment has been received from both parties, the rights of each party are identified, payment terms are identified, the contract has commercial substance and collectability of the consideration to which the Company is entitled is probable. Contracts are generally evidenced through receipt of an approved purchase order or execution of a binding arrangement and can be both short and long-term. Long-term contracts within the segments relate to the sale of products with attached service-type warranty contracts that generally have a stated contract term that is greater than one year. Contracts may contain acceptance provisions where the Company is required to obtain technical acceptance from the customer upon completion of installation services and evidence of the system's functional performance within the customer's operating environment. The Company has concluded that acceptance criteria within its contracts can be objectively evaluated and will not impact the Company's transfer of control assessment under ASC 606.

- *Identify the performance obligations in the contract.* Performance obligations include the sale of products and services. Certain customer arrangements related to the sale of automated cold sample management systems generally include more than one performance obligation and may include a combination of goods and or services, such as products with installation services or service-type warranty obligations. These contracts include multiple promises and as a result, the Company is required to evaluate each promise and determine whether the promise qualifies as a performance obligation within the contract. Contracts may contain the option to acquire additional products or services at defined prices. The Company reviews the pricing of these options to determine whether the option would exist independently of the current contract. If the pricing of contract options provides a material right to the customer that it would not receive without entering into the current contract, the Company accounts for the option as a separate performance obligation.

- *Determine the transaction price.* The transaction price of the Company's contracts with its customer is generally fixed, based on the amounts to be contractually billed to the customer. Although uncommon, certain contracts may contain variable consideration in the form of customer allowances and rebates that consist

primarily of retrospective volume-based discounts and other incentive programs. Variable consideration is estimated at contract inception and included in the transaction price if it is probable that a subsequent change in the estimate would not result in a significant revenue reversal. The period between transfer of control of the performance obligations within a customer contract and timing of payment is generally within one year. As a result, the Company's contracts typically do not include significant financing components.

- *Allocate the transaction price to the performance obligations in the contract.* For customer contracts that contain more than one performance obligation, the Company allocates the total transaction consideration to each performance obligation based on the relative stand-alone selling price of each performance obligation within the contract. The Company relies on either observable standalone sales or an expected cost-plus margin approach to determine the standalone selling price of offerings, depending on the nature of the performance obligation. Performance obligations whose standalone selling price is estimated using an expected cost-plus margin approach relate to the sale of customized automated cold sample management systems, services, and service-type warranties.

- *Recognize revenue when or as the Company satisfies a performance obligation*. The Company satisfies its performance obligations by transferring a product or service either at a point in time or over time, when the transfer of control of the underlying performance obligation has occurred. Control is evidenced by the customer's ability to direct the use of and obtain substantially all the remaining benefits from the performance obligation. Revenue from third-party sales for which the Company does not meet the criteria for gross revenue recognition is recognized on a net basis. All other revenue is recognized on a gross basis. The Company excludes from the transaction price all sales taxes assessed by governmental authorities and as a result, revenue is presented net of tax.

As a result of applying this five-step model under ASC 606, the Company recognizes revenues from its sale of products and services as follows:

- *Products:* Revenue from the sale of standard products is recognized upon their transfer of control to the customer, which is considered complete at either the time of shipment or arrival at destination, based on the agreed upon terms within the contract. The Company's payment terms for the sale of standard products are typically 30 to 60 days.

  Revenue from the sales of certain products that involve significant customization, which include primarily automated cold sample management systems is recognized over time as the asset created by the Company's performance does not have alternative use to the Company and an enforceable right to payment for performance completed to date is present. The Company recognizes revenue as work progresses based on a percentage of actual labor hours incurred on the project to-date and total estimated labor hours expected to be incurred on the project. The selection of the method to measure progress towards completion requires judgment. The Company has concluded that using the percentage of labor hours incurred to estimated labor hours needed to complete the project most appropriately depicts the Company's efforts towards satisfaction of the performance obligation. The Company develops profit estimates for long-term contracts based on total revenue expected to be generated from the project and total costs anticipated to be incurred in the project. These estimates are based on a number of factors, including the degree of required product customization and the work required to be able to install the product in the customer's existing environment, as well as the Company's historical experience, project plans and an assessment of the risks and uncertainties inherent in the contract related to implementation delays or performance issues that may or may not be within the Company's control. The Company estimates a loss on a contract by comparing total estimated contract revenue to the total estimated contract costs and recognizes a loss during the period in which it becomes probable and can be reasonably estimated. The Company reviews profit estimates for long-term contracts during each reporting period and revises the estimate based on changes in circumstances. Revenue for certain arrangements that involve significant product customization but do not provide the Company with an enforceable right to payment for performance completed to date are recognized at a point in time, upon completion or substantial completion of the project, provided transfer of control has occurred. The project is considered substantially complete when the Company receives acceptance from the customer and remaining tasks are perfunctory or inconsequential and in control of the Company. Generally, the

terms of long-term contracts provide for progress billings based on completion of milestones or other defined phases of work. In certain instances, payments collected from customers in advance of recognizing the related revenue are recorded and presented as contract liabilities within "Deferred revenue" on the Company's Consolidated Balance Sheet. Additionally, due to certain billing constraints within contracts, the customer may retain a portion of the contract price until completion of the contract. In these contracts, an unbilled receivable is recorded when revenue recognized may exceed billings, which the Company presents as a contract asset on the balance sheet, which is included within the "Prepaid expenses and other current assets" on the Company's Consolidated Balance Sheet.

- *Services:* Service revenue is generally recognized ratably over time or on an output method, as the customer simultaneously receives and consumes the benefit of these services as they are performed. Payments related to service-type warranties may be made up front or proportionally over the contract term. Revenue for sample management and storage are recognized over the period the services are rendered or samples are stored. Payment due or received from the customers prior to rendering the associated services are recorded as a contract liability.

- *Genomic Services:* The Company's genomic services are professional services which includes Sanger sequencing, Next Generation sequencing, gene synthesis and gene editing-CRISPR based gene editing. Revenue from genomic services is recognized over time and is based upon the fact that transfer of control takes place over time as determined using the input method of costs incurred.

Research and Development Expense

Research and development costs are expensed as incurred. Research and development costs consist primarily of personnel expenses related to development of new products, as well as enhancements and engineering changes to existing products and development of hardware and software components.

Stock-Based Compensation Expense

The Company measures stock-based compensation cost at fair value on the grant date and recognizes the expense over the service period for the awards expected to vest. The fair value of restricted stock units is determined based on the number of shares granted and the closing price of the Company's common stock quoted on the Nasdaq Global Select Market on the date of grant.

For awards that vest based on service conditions, the Company recognizes stock-based compensation expense on a straight-line basis over the requisite service period. For awards that vest subject to performance conditions, the Company recognizes stock-based compensation expense ratably over the performance period if it is probable that performance condition will be met and adjusted for the percentage of shares probable of achieving the performance goals. Each quarter, the Company assesses the probability of achieving the performance goals. Current estimates may differ from actual results and future changes in estimates. The Company makes estimates of stock award forfeitures and the number of awards expected to vest. The Company considers many factors in developing forfeiture estimates, including award types, employee classes and historical experience.

The following table reflects stock-based compensation expense, excluding amounts related to discontinued operations, recorded during the fiscal years ended September 30, 2022, 2021 and 2020 (in thousands):

	Year Ended September 30,		
	2022	2021	2020
Restricted stock units	$ 10,597	$ 18,923	$ 9,907
Employee stock purchase plan	1,846	1,128	744
Total stock-based compensation expense	$ 12,443	$ 20,051	$ 10,651

Valuation Assumptions for an Employee Stock Purchase Plan

The fair value of shares issued under the employee stock purchase plan is estimated on the commencement date of each offering period using the Black-Scholes option-pricing model with the following weighted average assumptions for the fiscal years ended September 30, 2022, 2021 and 2020:

	Year Ended September 30,		
	2022	2021	2020
Risk-free interest rate	1.7 %	0.3 %	0.9 %
Volatility	49 %	53 %	58 %
Expected life	6 months	6 months	6 months
Dividend yield	— %	0.6 %	1.1 %

The risk-free rate is based on the U.S. Treasury yield curve for notes with terms approximating the expected life of the shares granted. The expected stock price volatility is determined based on the Company's historic stock prices over a period commensurate with the expected life of the shares granted. The expected life represents the weighted average period over which the shares are expected to be purchased. Dividend yields are projected based on the Company's history of dividend declarations and management's intention for future dividend declarations.

Income Taxes

The Company records income taxes using the asset and liability method. Deferred income tax assets and liabilities are recognized for the future tax differences between the financial statement carrying amounts of existing assets and liabilities and their respective income tax bases, as well as operating loss and tax credit carryforwards. The Company's Consolidated Financial Statements contain certain deferred tax assets that were recorded as a result of operating losses, as well as other temporary differences between financial and tax accounting. A valuation allowance is established against deferred tax assets if, based upon the evaluation of positive and negative evidence and the extent to which that evidence is objectively verifiable, it is more likely than not that some or all of the deferred tax assets will not be realized.

Significant management judgment is required in determining the Company's income tax provision, the Company's deferred tax assets and liabilities and any valuation allowance recorded against those net deferred tax assets. The Company evaluates the weight of all available evidence to determine whether it is more likely than not that some portion or all of the net deferred income tax assets will not be realized.

The calculation of the Company's income tax liabilities involves consideration of uncertainties in the application of complex tax regulations. The Company recognizes liabilities for uncertain tax positions based on a two-step process. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained upon an audit conducted by taxing authorities, including resolution of related appeals or litigation processes, if any. If the Company determines that a tax position will more likely than not be sustained, the second step requires the Company to estimate and measure the tax benefit as the largest amount that is more likely than not to be realized upon ultimate settlement. It is inherently difficult and subjective to estimate such amounts, as the Company must determine the probability of various possible outcomes. The Company re-evaluates these uncertain tax positions on a quarterly basis. This evaluation is based on factors, such as changes in facts or circumstances, tax law, new audit activity and effectively settled issues. Determining whether an uncertain tax position is effectively settled requires judgment. A change in recognition or measurement may result in the recognition of a tax benefit or an additional charge to the tax provision.

Earnings Per Share

Basic income or loss per share is determined by dividing net income by the weighted average common shares outstanding during the period. Diluted income or loss per share is determined by dividing net income by diluted weighted average shares outstanding during the period. Diluted weighted average shares reflect the dilutive effect, if any, of potential common shares. To the extent their effect is dilutive, employee equity awards and other commitments to be

settled in common stock are included in the calculation of diluted income or loss per share based on the treasury stock method. Potential common shares are excluded from the calculation of dilutive weighted average shares outstanding if their effect would be anti-dilutive at the balance sheet date based on a treasury stock method or due to a net loss.

Recently Issued Accounting Pronouncements

In November 2021, the FASB issued Accounting Standards Update ("ASU") 2021-10, *Government Assistance (Topic 832) – Disclosures by Business Entities about Government Assistance*. The amendment in this ASU requires disclosures to increase the transparency of transactions with a government accounted for by applying a grant or contribution accounting model by analogy, including (1) the types of transactions, (2) the accounting for those transactions, and (3) the effect of those transactions on an entity's financial statements. This ASU is effective for annual periods beginning after December 15, 2021. The Company will adopt the provisions of this ASU in fiscal year 2023. The Company is evaluating the effect of adopting this new accounting guidance.

Recently Adopted Accounting Pronouncements

In October 2021, the FASB issued ASU 2021-08, *Business Combinations (Topic 805), Accounting for Contract Assets and Contract Liabilities from Contracts with Customers*. ASU 2021-08 requires an entity to recognize and measure contract assets and contract liabilities acquired in a business combination in accordance with ASC 606. Under current GAAP, an acquirer generally recognizes such items at fair value on the acquisition date. The ASU is effective for fiscal years beginning after December 15, 2022, including interim periods within those fiscal years. Early adoption is permitted. The standard should be applied prospectively to business combinations occurring on or after the effective date of the amendments. The Company adopted the guidance during the first quarter of fiscal year 2022. The impact of the adoption of this ASU is immaterial to the Company's consolidated financial statements.

In October 2020, the FASB issued "ASU" 2020-10, *Codification Improvements*. The amendments in this ASU represent changes to clarify certain ASCs, correct unintended application of guidance, or make minor improvements to certain ASCs that are not expected to have a significant effect on current accounting practice or create a significant administrative cost to most entities. ASU 2020-10 is effective for annual periods beginning after December 15, 2020 and interim periods within those annual periods, with early adoption permitted. The amendments in this ASU should be applied retrospectively. This ASU did not affect the Company's consolidated financial statements or disclosures. The Company adopted the provisions of this ASU in the first quarter of fiscal 2022.

In March 2020, the FASB issued ASU 2020-04, *Facilitation of the Effects of Reference Rate Reform on Financial Reporting*. In January 2021, the FASB issued ASU 2021-01, *Reference Rate Reform (Topic 848): Scope.* The ASUs provide temporary optional expedients and exceptions to the GAAP guidance on contract modifications and hedge accounting to ease the financial reporting burdens related to the expected market transition from the London Interbank Offered Rate (LIBOR) and other interbank offered rates to alternative reference rates. The provisions of the ASUs are only available until December 31, 2022, when the reference rate replacement activity is expected to be completed. There is no significant accounting impact on the Company's consolidated financial statements and related disclosures as a result of the adoption of this ASU.

In December 2019, the FASB issued ASU 2019-12, *Simplifying the Accounting for Income Taxes (Topic 740)*, which removes certain exceptions to the general principles in ASC Topic 740, *Income Taxes* ("ASC Topic 740"), and improves consistent application of and simplifies GAAP for other areas of Topic 740 clarifying and amending existing guidance. This ASU is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2020. The Company adopted the provisions of this ASU in the first quarter of fiscal 2022. There is no significant accounting impact on the Company's consolidated financial statements and related disclosures as a result of the adoption of this ASU.

In August 2018, the FASB issued ASU 2018-14, *Disclosure Framework — Changes to the Disclosure Requirements for Defined Benefit Plans*, which amends ASC 715 to add, remove, and clarify disclosure requirements related to defined benefit pension and other postretirement plans. The amendments require additional disclosure for the weighted-average interest crediting rates, a narrative description of the reasons for significant gains and losses, and an

explanation of any other significant changes in the benefit obligation or plan assets. The amendment removes disclosure requirements for accumulated other comprehensive income expected to be recognized over the next year, information about plan assets to be returned to the entity, and the effects of a one-percentage-point change on the assumed health care costs and the effect of this change in rates on service cost, interest cost, and the benefit obligation for postretirement health care benefits. The ASU is effective for fiscal years ending after December 15, 2020. Early adoption is permitted. The ASU does not amend the interim disclosure requirements of ASC 715-20. The Company adopted the provisions of this ASU in the first quarter of fiscal 2022. There is no significant accounting impact on the Company's consolidated financial statements and related disclosures as a result of the adoption of this ASU.

In December 2019, the FASB issued ASU 2019-12, *Simplifying the Accounting for Income Taxes (Topic 740)*, which removes certain exceptions to the general principles in Topic 740 and improves consistent application of and simplifies GAAP for other areas of Topic 740 clarifying and amending existing guidance. This ASU is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2020. Early adoption is permitted. The Company adopted the provisions of this ASU in the first quarter of fiscal 2022. There is no significant accounting impact on the Company's consolidated financial statements and related disclosures as a result of the adoption of this ASU.

3. Discontinued Operations

Disposition of Semiconductor Automation Business

On September 20, 2021, the Company entered into a definitive agreement to sell its semiconductor automation business to THL. On February 1, 2022, the Company completed the sale of the semiconductor automation business for $2.9 billion in cash. Net income from discontinued operations for the fiscal year ended September 30, 2022 is inclusive of the gain on sale of $2.6 billion. As part of the transaction, the Company recorded an $18.1 million liability related to retention bonuses and cash settled stock-based awards for former employees of the Company that were conveyed with the transaction. The Company paid $0.6 million in the quarter ended September 30, 2022, and will remit the remaining payment to THL during fiscal 2023, at the end of the retention period and THL will directly pay the Company's former employees. Following the completion of the sale, the Company no longer serves the semiconductor market.

In connection with the closing of the sale, the Company and THL entered into a transition services agreement, to which both the Company and THL will provide each other with certain transition services related to finance and accounting, information technology, human resources, compliance, facilities, legal and research and development support, for time periods ranging from three to 24 months. In addition, the Company entered into two separate lease agreements for leases back to the Company for portions of the facilities that have served as its corporate headquarters in Chelmsford, Massachusetts, and were sold to THL as part of the sale agreement. Each lease provides for a term of 24 months, which may be terminated earlier by the Company upon 90 days' notice to THL. The transition services agreement and lease agreements approximate fair value and there is no material impact to the Company's results.

During the fourth quarter of fiscal 2021, the Company determined that the semiconductor automation business met the criteria to be classified as a discontinued operation and, as a result, its historical financial results are reflected in the Company's financial statements as a discontinued operation, and assets and liabilities were classified as assets and liabilities held for sale.

The following table presents the financial results of automation business discontinued operations with respect to the automation business (in thousands):

	Year Ended September 30,		
	2022	2021	2020
Revenue			
Products	$ 244,962	$ 624,358	$ 463,309
Services	19,468	55,698	45,427
Total revenue	264,430	680,056	$ 508,736
Cost of revenue			
Products	141,165	354,786	274,727
Services	11,159	29,750	26,134
Total cost of revenue	152,324	384,536	300,861
Gross profit	112,106	295,520	207,875
Operating expenses			
Research and development	18,486	48,647	41,245
Selling, general and administrative	30,622	70,634	50,881
Restructuring charges	-	230	692
Total operating expenses	49,108	119,511	92,818
Operating income	62,998	176,009	115,057
Other income, net			
Gain on divestiture	2,561,820	133	207
Income before income taxes	2,624,818	176,142	115,264
Income tax provision	480,673	35,357	23,867
Net income from discontinued operations	$ 2,144,145	$ 140,785	$ 91,397

On July 1, 2019, the Company sold its semiconductor cryogenics business. During the fiscal year ended September 30, 2021, the Company recorded a $1.3 million negative working capital adjustment to the gain on divestiture that was previously recorded in the fourth fiscal quarter of 2019. This adjustment is shown within other income, net within the income statement for the semiconductor automation business.

The following table presents the significant non-cash items and capital expenditures for the discontinued operations with respect to the semiconductor automation business that are included in the Consolidated Statements of Cash Flows (in thousands):

	Year Ended September 30,		
	2022	2021	2020
Depreciation and amortization	$ -	$ 8,472	$ 11,374
Capital expenditures	2,862	6,414	4,815
Stock-based compensation	-	7,405	5,501

The carrying value of the assets and liabilities of the discontinued operations with respect to the semiconductor automation business on the Consolidated Balance Sheets as of September 30, 2021 was as follows (in thousands):

	2021
Assets	
Cash and cash equivalents	$ 45,000
Accounts receivable, net	142,256
Inventories	110,735
Other current assets	13,394
Total current assets of discontinued operation	$ 311,385
Property, plant and equipment, net	$ 32,058
Long-term deferred tax assets	3,167
Goodwill	81,477
Intangibles, net	44,468
Other assets	22,658
Total long-term assets of discontinued operation	$ 183,828
Liabilities	
Accounts payable	$ 68,074
Deferred revenue	7,141
Accrued warranty and retrofit costs	6,081
Accrued compensation and benefits	18,144
Accrued Income Taxes	11,702
Accrued expenses and other current liabilities	18,014
Total current liabilities of discontinued operation	$ 129,156
Long-term tax reserves	2,356
Long-term deferred tax liabilities	6,548
Long-term pension liabilities	5,490
Long-term operating lease liabilities	15,425
Other long-term liabilities	2,625
Total long-term liabilities of discontinued operation	$ 32,444

Acquisition within the Semiconductor Automation Business

On April 29, 2021, the Company acquired Precise Automation Inc., a leading developer of collaborative robots and automation subsystems headquartered in Fremont, California. The total cash purchase price for the acquisition was approximately $69.8 million. Precise provides the semiconductor automation business with a product offering and technology portfolio to take advantage of the opportunities in the collaborative robot market.

The allocation of the consideration included $38.7 million of technology, $2.5 million of customer relationships, $33.1 million of goodwill, $6.2 million of deferred tax liabilities, and several other assets and liabilities.

The Company applied variations of the income approach to estimate the fair values of the intangible assets acquired. The completed technology was valued using excess earnings method and the customer relationships was valued using distributor margin method, both of which have a useful life of 11 years. The intangible assets acquired are amortized over the total weighted average period of 11 years using methods that approximate the pattern in which the economic benefits are expected to be realized.

The Company has included the financial results of the acquired operations within income from discontinued operations on its Consolidated Statements of Operations. The goodwill and intangible assets are not tax deductible

4. Acquisitions

The Company recorded the assets acquired and liabilities assumed related to the below acquisitions at their fair values as of the acquisition date, from a market participant's perspective. While the Company uses its best estimates and assumptions as part of the purchase price allocation process to value the assets acquired and liabilities assumed on the acquisition date, its estimates and assumptions are subject to refinement. Fair value estimates are based on a complex series of judgments about future events and uncertainties and rely heavily on estimates and assumptions. The judgments used to determine the estimated fair value assigned to each class of assets acquired and liabilities assumed, as well as asset lives, can materially impact the Company's results of operations. The finalization of the assignment of fair values will be completed within one year after the respective acquisition date.

The Company did not present a pro forma information summary for its consolidated results of operations for the acquisitions completed because such results were immaterial.

Acquisition Completed in Fiscal Year 2022

Barkey Holding GmbH

On July 1, 2022, the Company acquired Barkey Holding GmbH and its subsidiaries ("Barkey"), a leading provider of controlled rate thawing devices for customers in the medical, biotech and pharmaceutical industries, head quartered in Leopoldshöhe, Germany. The Company has included the financial results of the acquired operations within the Life Sciences Products segment. The total cash purchase price of the acquisition was approximately $84.8 million, net of cash acquired. The acquisition brings innovative products and capabilities that extend the Company's extensive cold chain of condition portfolio of products and services, while also expanding our customer reach in the fast-growing cell and gene therapy space. The allocation of the consideration included $3.0 million of customer relationships, $29.0 million of technology, $57.8 million of goodwill, $9.8 million of deferred tax liabilities, and several other assets and liabilities. The weighted useful life of all the intangible assets acquired is 15 years. The goodwill and intangibles are not tax deductible.

Acquisitions Completed in Fiscal Year 2021

Abeyatech LLC

On April 2, 2021, the Company acquired Abeyatech LLC. The Company has included the financial results of the acquired operations within the Life Sciences Products segment. The purchase price includes $9.9 million cash payment and $9.4 million in contingent consideration, at present value, based on the acquired business' performance for the twelve-month period ending December 31, 2021, subject to customary working capital adjustments and other adjustments. The acquisition enhances the breadth and depth of the Company's offerings and expands its expertise in the Life Sciences Products segment. The allocation of the consideration included $11.9 million of technology, $4.4 million of goodwill, and several other assets and liabilities for $3.0 million. The weighted useful life of all the intangible assets acquired is 12 years. The goodwill and intangibles are tax deductible. During the three months ended March 31, 2022, the Company paid $10.0 million related to the contingent consideration recorded at the time of acquisition based on the achievement of business performance targets set forth in the purchase agreement.

Trans-Hit Biomarkers, Inc.

On December 3, 2020, the Company acquired Trans-Hit Biomarkers Inc. ("THB"), a worldwide biospecimen procurement service provider based in Montreal, Canada. THB has an extensive collection capability for biospecimens and clinical samples through a worldwide partner network of clinical sites and biobanks. The total cash purchase price of the acquisition was approximately $15.1 million, net of cash acquired. The acquisition enhances the breadth and depth of the Company's offerings and expands its expertise in the Life Sciences Services segment. The allocation of the consideration included $7.8 million of customer relationships, $9.3 million of goodwill, $2.4 million of deferred tax liabilities, and several other assets and liabilities. The weighted useful life of all intangibles acquired is 11 years. The Company has included the financial results of the acquired operations in the Life Sciences Services segment. The goodwill and intangibles are not tax deductible.

Acquisitions Completed in Fiscal Year 2020

On February 11, 2020, the Company acquired RURO, Inc. ("RURO"), an informatics software company based in Frederick, Maryland. RURO provides cloud-based software solutions to manage laboratory workflow and bio-sample data for a broad range of customers in the biotech, healthcare, and pharmaceutical sectors. The addition of RURO's capabilities and offerings will enable the Company to offer enhanced on-site and off-site management of biological sample inventories as well as integration solutions to its customers for their increasingly distributed workflow. The total cash purchase price of the acquisition net of cash acquired was $15.2 million. The allocation of the consideration primarily included $0.6 million of accounts receivable, $2.9 million of customer relationships, $2.9 million of technology assets, $11.0 million of goodwill, and $2.7 million of liabilities. The goodwill from this acquisition is reported within the Life Sciences Services segment and is not tax deductible.

5. Marketable Securities

The Company invests in marketable securities that are classified as available-for-sale and records them at fair value in the Company's Consolidated Balance Sheets. Marketable securities reported as current assets represent investments that mature within one year from the balance sheet date. Long-term marketable securities represent investments with maturity dates greater than one year from the balance sheet date.

Unrealized gains and losses are excluded from earnings and reported as a separate component of "Accumulated other comprehensive income" in the accompanying Consolidated Balance Sheets until the security is sold or matures. Gains or losses realized from sales of marketable securities are computed based on the specific identification method and recognized as a component of "Other income (expenses)" in the accompanying Consolidated Statements of Operations. During fiscal year 2022, the Company had sales and maturities of marketable securities of $705.4 million. During the fiscal year 2021, there were insignificant sales of marketable securities.

The following is a summary of the amortized cost and the fair value, including accrued interest receivable, as well as unrealized gains (losses) on the short-term and long-term marketable securities as of September 30, 2022 and 2021 (in thousands):

	Amortized Cost	Gross Unrealized Losses	Gross Unrealized Gains	Fair Value
September 30, 2022:				
U.S. Treasury securities and obligations of U.S. government agencies	$ 804,774	$ (6,163)	$ 21	$ 798,632
Bank certificates of deposits	8,335	(158)	1	8,178
Corporate securities	406,270	(8,113)	—	398,157
Municipal securities	59,043	(226)	—	58,817
	$ 1,278,422	$ (14,660)	$ 22	$ 1,263,784
September 30, 2021:				
Bank certificates of deposits	$ 30	$ —	$ —	$ 30
Corporate securities	3,624	—	—	3,624
Municipal securities	—	—	—	—
Other debt securities	25	—	—	25
	$ 3,679	$ —	$ —	$ 3,679

The fair values of the marketable securities by contractual maturities at September 30, 2022 are presented below (in thousands).

	Amortized Cost	Fair Value
Due in one year or less	$ 914,706	$ 909,913
Due after one year through five years	360,930	351,085
Due after five years through ten years	—	—
Due after ten years	2,786	2,786
Total marketable securities	$ 1,278,422	$ 1,263,784

Expected maturities could differ from contractual maturities because the security issuers may have the right to prepay obligations without prepayment penalties.

The Company reviews the marketable securities for impairment at each reporting period to determine if any of the securities have experienced an other-than-temporary decline in fair value. The Company considers factors, such as the length of time and extent to which the market value has been less than the cost, the financial condition and near-term prospects of the issuer, the Company's intent to sell, or whether it is more likely than not it will be required to sell the investment before recovery of its amortized cost basis. If the Company believes that an other-than-temporary decline in fair value has occurred, it writes down the investment to its fair value and recognizes the credit loss in earnings and the non-credit loss in accumulated other comprehensive income or loss. Unrealized losses from fixed-income securities are primarily attributable to changes in interest rates. Management does not believe any unrealized losses represent impairments based on our evaluation of the available evidence.

6. Property, Plant and Equipment

Property, plant and equipment were as follows as of September 30, 2022 and 2021 (in thousands):

	September 30,	
	2022	2021
Buildings, land, and land use right	$ 29,581	$ 4,987
Computer equipment and software	35,814	27,350
Machinery and equipment	90,700	77,217
Furniture and fixtures	5,806	2,516
Leasehold improvements	37,495	27,165
Capital projects in progress	36,644	52,435
Right-of-use Asset	2,476	2,252
	238,516	193,922
Less: accumulated depreciation and amortization	(84,046)	(63,203)
Property, plant and equipment, net	$ 154,470	$ 130,719

The property, plant and equipment and accumulated depreciation and amortization amounts in 2021 in the table above have been adjusted to remove certain fully depreciated assets.

Depreciation expense was $21.9 million, $19.5 million and $18.7 million, respectively, for the fiscal years ended September 30, 2022, 2021, and 2020. The Company recorded $9.2 million of additions to property, plant and equipment for which cash payments had not yet been made as of September 30, 2022.

7. Leases

The Company has operating leases for real estate and non-real estate and finance leases for non-real estate in North America, Europe, and Asia. Non-real estate leases are primarily related to vehicles and office equipment. Lease expiration dates range between 2022 and 2042.

The components of operating lease expense were as follows (in thousands):

	Year Ended September 30,	
	2022	2021
Operating lease costs	$ 9,396	$ 7,630
Finance lease costs:		
Amortization of assets	182	859
Interest on lease liabilities	5	39
Total finance lease costs	187	898
Variable lease costs	3	1,833
Short-term lease costs	1,411	199
Total lease costs	$ 10,997	$ 10,560

Supplemental balance sheet information related to leases is as follows (in thousands, except lease term and discount rate):

	September 30, 2022	September 30, 2021
Operating Leases:		
Operating lease right-of-use assets	$ 54,059	$ 49,650
Accrued expenses and other current liabilities	$ 6,924	$ 5,254
Long-term operating lease liabilities	49,227	45,088
Total operating lease liabilities	$ 56,151	$ 50,342
Finance Leases:		
Property, plant and equipment, at cost	$ 2,476	$ 2,252
Accumulated amortization	(2,276)	(2,105)
Property, plant and equipment, net	$ 200	$ 147
Accrued expenses and other current liabilities	$ 96	$ 360
Other long-term liabilities	98	(10)
Total finance lease liabilities	$ 194	$ 350
Weighted average remaining lease term (in years):		
Operating leases	10.82	11.33
Finance leases	2.19	0.53
Weighted average discount rate:		
Operating leases	3.93 %	3.90 %
Finance leases	1.29 %	4.87 %

Supplemental cash flow information related to leases was as follows (in thousands):

	Year Ended September 30,	
	2022	2021
Cash paid for amounts included in measurement of liabilities:		
Operating cash flows from operating leases	$ 7,977	$ 6,213
Operating cash flows from finance leases	5	41
Financing cash flows from finance leases	393	1,130
ROU assets obtained in exchange for lease liabilities:		
Operating leases	$ 10,842	$ 31,944

Future lease payments for operating leases as of September 30, 2022 were as follows for the subsequent five fiscal years and thereafter (in thousands):

	Operating Leases
Fiscal year ended September 30,	
2023	$ 8,907
2024	7,648
2025	7,251
2026	6,275
2027	5,948
Thereafter	35,366
Total future lease payments	71,395
Less imputed interest	(15,244)
Total lease liability balance	$ 56,151

As of September 30, 2022, the Company has not entered into any significant leases that have not commenced yet.

8. Goodwill and Intangible Assets

Goodwill represents the excess of net book value over the estimated fair value of net tangible and identifiable intangible assets of a reporting unit. Goodwill is tested for impairment annually or more often if impairment indicators are present at the reporting unit level. The Company elected April 1st as its annual goodwill impairment assessment date. If the existence of events or circumstances indicates that it is more likely than not that fair values of the reporting units are below their carrying values, the Company performs additional impairment tests during interim periods to evaluate goodwill for impairment.

In accordance with ASC 350, the Company initially assesses qualitative factors to determine whether the existence of events or circumstances indicates that it is more likely than not that the fair value of a reporting unit is less than its carrying value. If the Company determines, based on this assessment, that it is more likely than not that the fair value of the reporting unit is less than its carrying value, it performs a quantitative goodwill impairment test by comparing the reporting unit's fair value with its carrying value. An impairment loss is recognized for the amount by which the reporting unit's carrying value exceeds its fair value, up to the total amount of goodwill allocated to the reporting unit. No impairment loss is recognized if the fair value of the reporting exceeds its carrying value.

The Company has two operating, two reportable segments, and two reporting units consisting of Life Sciences Products and Life Sciences Services. The Company previously had three reporting units, which included the Life Sciences Products operating segment, which constitutes of a single reporting unit, and two reporting units within the Life Sciences Services operating segment, sample repository solutions and genomic services, which were combined into a single reporting unit within the Life Sciences Services segment following the 2021 impairment test.

The Company completed its annual goodwill impairment test as of April 1, 2022 for its two reporting units. The two reporting units include Life Sciences Products as the only reporting unit within the Life Sciences Products segment, and

Life Sciences Services as the only reporting unit within the Life Sciences Services segment. The Company conducted a qualitative assessment for both the Life Science Products and Life Science Services reporting units and determined that it was more likely than not that the fair value of each reporting unit was greater than its carrying value. Based on the test results, the Company determined that no adjustment to goodwill was necessary. As a result of the analysis, the Company did not perform the quantitative assessment for the reporting units, and did not recognize any impairment losses.

In the fourth quarter of 2022, the Company experienced a decline in our stock price resulting in its market capitalization being less than its carrying value. Therefore, as of September 30, 2022, the Company assessed several events and circumstances that could affect the significant inputs used to determine the fair value of its reporting units, including updates to operating margins and cash flows, and the overall change in the economic climate. The Company considered the decline in the market capitalization being less than the carrying value of its reporting units in its evaluation of goodwill impairment indicators and determined it appropriate to perform a quantitative assessment of both its reporting units as of September 30, 2022. The Company's valuation was based on the DCF Method. The Company concluded that there was no impairment, as the estimated fair value of the reporting units exceeded their carrying value.

The following table sets forth the changes in the carrying amount of goodwill by reporting unit since September 30, 2020 (in thousands):

	Life Sciences Products	Life Sciences Services	Total
Balance, at September 30, 2020	$ 103,278	$ 349,899	$ 453,177
Acquisitions and currency translation adjustments	6,860	9,319	16,179
Balance, at September 30, 2021	110,138	359,218	469,356
Acquisitions and currency translation adjustments	44,474	(207)	44,267
Balance, at September 30, 2022	$ 154,612	$ 359,011	$ 513,623

During fiscal year 2022, the Company recorded a goodwill increase of $44.3 million primarily related to the acquisitions of Barkey of $57.8 million in the fourth quarter of fiscal year 2022 net with the impact of foreign currency translation adjustments of $13.5 million.

The components of the Company's identifiable intangible assets as of September 30, 2022 and 2021 are as follows (in thousands):

	September 30, 2022			September 30, 2021		
	Cost	Accumulated Amortization	Net Book Value	Cost	Accumulated Amortization	Net Book Value
Patents	$ 1,225	$ 1,106	$ 119	$ 1,242	$ 1,002	$ 240
Completed technology	99,525	37,991	61,534	75,527	32,383	43,144
Trademarks and trade names	400	41	359	424	33	391
Non-competition agreements	681	439	242	681	249	432
Customer relationships	246,949	130,802	116,147	253,486	111,159	142,327
Other intangibles	202	202	—	246	246	—
	$ 348,982	$ 170,581	$ 178,401	$ 331,606	$ 145,072	$ 186,534

Amortization expense for intangible assets was $32.3 million, $37.4 million and $35.4 million, respectively, for the fiscal years ended September 30, 2022, 2021 and 2020.

Estimated future amortization expense for the intangible assets as of September 30, 2022 is as follows (in thousands):

2023	$ 30,837
2024	28,157
2025	24,071
2026	21,471
2027	16,955
Thereafter	56,910
	$ 178,401

9. Supplementary Balance Sheet Information

The following is a summary of accounts receivable at September 30, 2022 and 2021 (in thousands):

	September 30,	
	2022	2021
Accounts receivable	$ 168,920	$ 124,195
Less allowance for expected credit losses	(5,162)	(4,318)
Accounts receivable, net	$ 163,758	$ 119,877

The allowance for expected credit losses for the fiscal years ended September 30, 2022, 2021 and 2020 is as follows (in thousands):

Description	Balance at Beginning of Period	Provisions	Reversals of Bad Debt Expense	Balance at End of Period
2022 Allowance for expected credit losses	$ 4,318	$ 3,536	$ (2,692)	$ 5,162
2021 Allowance for expected credit losses	7,146	3,445	(6,273)	4,318
2020 Allowance for expected credit losses	3,548	4,600	(1,002)	7,146

The following is a summary of inventories at September 30, 2022 and 2021 (in thousands):

	September 30,	
	2022	2021
Inventories		
Raw materials and purchased parts	$ 39,685	$ 27,644
Work-in-process	4,816	4,787
Finished goods	41,043	27,967
Total inventories	$ 85,544	$ 60,398

The activity for excess and obsolete inventory reserves is as follows for the fiscal years ended September 30, 2022, 2021 and 2020 (in thousands):

Description	Balance at Beginning of Period	Provisions	Inventory Disposals and Adjustments	Balance at End of Period
2022 Reserves for excess and obsolete inventory	$ 3,681	$ 1,752	$ (1,351)	$ 4,082
2021 Reserves for excess and obsolete inventory	3,136	1,522	$ (977)	3,681
2020 Reserves for excess and obsolete inventory	3,157	1,515	(1,536)	3,136

The activity for valuation allowance for deferred tax assets is as follows for the fiscal years ended September 30, 2022, 2021 and 2020 (in thousands):

Description	Balance at Beginning of Period	Charged to Income Tax Benefit	Charged to Other Accounts	Balance at End of Period
2022 Valuation allowance for deferred tax assets	$ 8,592	$ 1,337	$ (4,002)	$ 5,927
2021 Valuation allowance for deferred tax assets	10,623	(3,247)	$ 1,216	8,592
2020 Valuation allowance for deferred tax assets	12,843	(2,514)	294	10,623

The Company establishes reserves for estimated cost of product warranties based on historical information. Product warranty reserves are recorded at the time product revenue is recognized, and retrofit accruals are recorded at the time retrofit programs are established. The Company's warranty obligation is affected by product failure rates, utilization levels, material usage, service delivery costs incurred in correcting a product failure and supplier warranties on parts delivered to the Company. The following is a summary of product warranty and retrofit activity on a gross basis for the fiscal years ended September 30, 2022, 2021 and 2020 (in thousands):

	Amount
Balance at September 30, 2019	$ 2,314
Accruals for warranties during the year	2,779
Costs incurred during the year	(2,882)
Balance at September 30, 2020	2,211
Accruals for warranties during the year	2,300
Costs incurred during the year	(2,181)
Balance at September 30, 2021	2,330
Adjustments for acquisitions	254
Accruals for warranties during the year	2,438
Costs incurred during the year	(2,132)
Balance at September 30, 2022	$ 2,890

10. Debt and Line of Credit

On October 4, 2017, the Company entered into a $200.0 million term loan with the lenders pursuant to the terms of a credit agreement. The term loan was issued at $197.6 million, or 98.8% of its par value, resulting in a discount of $2.4 million, or 1.2%, which represented loan origination fees paid at the closing.

During the fiscal year ended September 30, 2022 and 2021, the weighted average stated interest rate paid on all outstanding debt was 2.7% and 2.8%, respectively. During the year ended September 30, 2022 and 2021, the Company incurred aggregate interest expense of $0.5 million and $1.7 million, respectively, in connection with the borrowings.

On February 1, 2022, the Company completed the sale of its semiconductor automation business and used $49.7 million of the proceeds from the sale to extinguish the outstanding balance of the term loan. The Company also terminated its revolving line of credit which had no borrowings outstanding. The Company recorded a loss on debt and line of credit extinguishment of $0.6 million.

The deferred financing costs were accreted over the term of the loan using the effective interest rate method and are included in “Interest expense” in the accompanying Consolidated Statements of Operations. The Company’s deferred financing costs as of September 30, 2022 were zero, due to the extinguishment of debt during the fiscal year. As of September 30, 2021, deferred financing costs were $0.3 million.

11. Income Taxes

The components of the income tax provision (benefit) from continuing operations for the fiscal years are as follows (in thousands):

	Year Ended September 30,		
	2022	2021	2020
Current income tax provision (benefit):			
Federal	$ (4,826)	$ (14,247)	$ 661
State	607	(867)	375
Foreign	4,627	15,484	3,721
Total current income tax provision	408	370	4,757
Deferred income tax provision (benefit):			
Federal	(815)	(11,469)	(11,833)
State	(180)	(2,283)	(1,976)
Foreign	1,937	(6,718)	(4,878)
Total deferred income tax provision (benefit)	942	(20,470)	(18,687)
Income tax provision (benefit)	$ 1,350	$ (20,100)	$ (13,930)

The components of income (loss) from continuing operations before income taxes for the fiscal years are as follows (in thousands):

	Year Ended September 30,		
	2022	2021	2020
Domestic	$ (39,392)	$ (88,763)	$ (48,932)
Foreign	29,456	39,794	8,640
Income before income taxes	$ (9,936)	$ (48,969)	$ (40,292)

The differences between the income tax provision (benefit) on income (loss) from continuing operations and income taxes computed using the applicable U.S. statutory federal tax rates for the fiscal years ended September 30, 2022, 2021 and 2020 are as follows (in thousands):

	Year Ended September 30,		
	2022	2021	2020
Income tax benefit computed at federal statutory rate	$ (2,086)	$ (10,284)	$ (8,461)
State income taxes, net of federal benefit	(776)	(1,005)	(1,557)
Foreign income taxed at different rates	(1,182)	(2,594)	(1,786)
Impact of investments in subsidiaries	—	7,128	289
Change in deferred tax asset valuation allowance	1,337	(3,247)	(2,514)
Impact of change in uncertain tax positions	(358)	(10,607)	1,144
Global intangible low taxed income, net of foreign tax credits	4,060	4,051	2,815
Impact of tax rate changes	1,531	165	(185)
Compensation	(1,199)	462	(2,302)
Tax credits	(2,102)	(4,050)	(676)
Merger costs	1,629	20	37
Other non-deductible expenses	717	468	398
Other true-ups	763	—	(520)
Research and development expense deduction	(910)	(730)	(547)
Other	(74)	123	(65)
Income tax provision (benefit)	$ 1,350	$ (20,100)	$ (13,930)

The Company has not provided deferred income taxes on the outside basis differences of its foreign subsidiaries which are not held for sale and part of the continuing operations business. For continuing operations the Company maintains its general assertion of indefinite reinvestment as of September 30, 2022. The foreign earnings are expected to be reinvested in foreign operations and acquisitions. Unremitted foreign earnings total approximately $1.3 billion. The Company did not calculate estimated deferred tax liabilities related to these earnings because such calculations would not be practicable due to the complexity of its hypothetical calculation. The taxes on these earnings would primarily consist of foreign withholding taxes, taxes on foreign exchange gains and losses resulting from potential future distributions, and minimal U.S. state income taxes. Substantially all of the unremitted earnings of the Company have been taxed in the U.S. based on the international tax regulations.

The significant components of the net deferred tax assets and liabilities as of September 30, 2022 and 2021 are as follows (in thousands):

	September 30,	
	2022	2021
Accruals and reserves not currently deductible	$ 9,704	$ 17,272
Federal, state and foreign tax credits	—	4,350
Other assets	14	502
Equity compensation	3,508	5,872
Net operating loss carryforwards	7,397	9,693
Lease liabilities	14,700	12,958
Mergers and acquisitions	—	7,239
Deferred revenue	3,609	3,258
Inventory reserves and valuation	1,081	6,946
Deferred tax assets	40,013	68,090
Depreciation and intangible amortization	(56,856)	(50,181)
Right-of-use assets	(14,146)	(12,683)
Other liabilities	(402)	(1,883)
Net unrealized loss	(27,144)	—
Deferred tax liabilities	(98,548)	(64,747)
Valuation allowance	(5,927)	(8,592)
Net deferred tax asset (liability)	$ (64,462)	$ (5,249)

Not included in the net deferred tax asset (liability) shown above are long-term assets held for sale of $3.2 million and long-term liabilities held for sale of $6.5 million as of September 30, 2021. The deferred tax assets on the balance sheets for September 30, 2022 and 2021 also include $1.1 million and $2.3 million deferred tax charge related to the company's intercompany profit elimination, respectively.

ASC Topic 740 requires that all available evidence, both positive and negative, be considered in determining, based on the weight of that evidence, whether a valuation allowance is needed. The weight given to the potential effect of negative and positive evidence should be commensurate with the extent to which it can be objectively verified. The more negative evidence that exists, (a) the more positive evidence is necessary and (b) the more difficult it is to support a conclusion that a valuation allowance is not needed for some portion or the entire deferred tax asset. A cumulative loss in recent years is considered a significant piece of negative evidence that is difficult to overcome in assessing the need for a valuation allowance.

The Company evaluates the realizability of its deferred tax assets by tax-paying component and assesses the need for a valuation allowance on an annual and quarterly basis. The Company evaluates the profitability of each tax-paying component on a historical cumulative basis and a forward-looking basis in the course of performing this analysis.

After evaluating all the relevant positive and negative evidence, the Company is not recording any additional valuation allowance against deferred tax assets in the United States. The Company is in a net deferred tax liability position and has sufficient future taxable income from the reversal of taxable temporary difference to offset the deductible temporary differences. The Company continued to hold a United States valuation allowance related to the realizability of certain state tax credits and net operating loss carry-forwards. The Company also maintains valuation allowances against net deferred tax assets in certain foreign tax-paying components as of the end of fiscal year 2022.

As of September 30, 2022, the Company has tax-effected federal, state and foreign net operating loss carry-forwards of approximately $0.4 million, $2.1 million and $4.9 million, respectively. The federal net operating loss carry-forwards expire at various dates through 2030. The state of net operating loss carry-forwards will begin to expire in 2026. The majority of the foreign net operating loss carryovers have an indefinite carry-forward in Germany.

The Company has performed studies to determine if there are any annual limitations on the federal net operating losses under Section 382 of the Internal Revenue Code of 1986, as amended, or the Internal Revenue Code. As a result of these studies, the Company has determined that ownership changes have occurred primarily in connection with acquisitions when the Company has issued stock to the sellers, as well as ownership changes in the subsidiaries acquired by the Company. The benefits of the net operating losses that will expire before utilization have not been recorded as deferred tax assets in the accompanying Consolidated Balance Sheets. Limitations on current year use of net operating loss carryovers have also been recorded in the tax provision.

The Company maintains liabilities for unrecognized tax benefits. These liabilities involve judgment and estimation, and they are monitored based on the best information available. A reconciliation of the beginning and ending amount of the consolidated liability for unrecognized income tax benefits during the fiscal years ended September 30, 2022, 2021 and 2020 is as follows (in thousands):

	Total
Balance at September 30, 2019	$ 16,860
Additions for tax positions in current year	448
Reductions from lapses in statutes of limitations	(586)
Balance at September 30, 2020	16,722
Reductions from lapses in statutes of limitations	(14,716)
Balance at September 30, 2021	2,006
Reductions from lapses in statutes of limitations	(327)
Balance at September 30, 2022	$ 1,679

All of the unrecognized tax benefits for the fiscal year ended September 30, 2022 would impact the effective tax rate if recognized. The Company recognizes interest related to unrecognized benefits as a component of the income tax provision (benefit), of which $0.0 million, $1.1 million and $1.1 million, respectively, was recognized for the fiscal years ended September 30, 2022, 2021 and 2020. In fiscal year 2019, the Company recorded $13.4 million of unrecognized tax benefits with the acquisition of GENEWIZ. All unrecognized tax benefits recorded with the acquisition of GENEWIZ were part of an indemnification agreement with the sellers. This unrecognized tax position was reversed in fiscal year 2021 due to the expiration of its statute of limitations. The corresponding indemnification asset was also written off during the year as a component of other expenses.

The Company is subject to U.S. federal, state, local and foreign income taxes in various jurisdictions. The amount of income taxes paid is subject to the Company's interpretation of applicable tax laws in the jurisdictions in which it files.

In the normal course of business, the Company is subject to income tax audits in various global jurisdictions in which it operates. The years subject to examination vary for the United States and international jurisdictions, with the earliest tax year being 2017. Based on the outcome of these examinations or the expiration of statutes of limitations for specific jurisdictions, it is reasonably possible that the related unrecognized tax benefits could change from those recorded in the Company's Consolidated Balance Sheets. The Company currently anticipates that it is reasonably possible that the unrecognized tax benefits and accrued interest on those benefits will be reduced by $1.6 million in the next 12 months due to statute of limitations expirations.

12. Derivative Instruments

The Company has transactions and balances denominated in currencies other than the functional currency of the transacting entity. Most of these transactions carrying foreign exchange risk are in Germany, the United Kingdom and China. These transactions and balances, including short-term advances between the Company and its subsidiaries, subject the Company's operations to exposure from exchange rate fluctuations. The impact of currency exchange rate movement can be positive or negative in any period. The Company mitigates the impact of potential currency transaction gains and losses on short-term intercompany advances through timely settlement of each transaction, generally within 30 days.

The Company also enters into foreign exchange contracts to reduce its exposure to currency fluctuations. Under forward contract arrangements, the Company typically agrees to purchase a fixed amount of one currency in exchange for a fixed amount of another currency on specified dates with maturities of three months or less. These transactions do not qualify for hedge accounting. Net gains and losses related to these contracts are recorded as a component of "Other expenses, net" in the accompanying Consolidated Statements of Operations and are as follows for the fiscal years ended September 30, 2022, 2021 and 2020 (in thousands):

	Fiscal Year Ended September 30,		
	2022	2021	2020
Realized gains (losses) on derivatives not designated as hedging instruments	$ 991	$ (7,781)	$ (2,671)

The fair value of derivative instruments are as follows at September 30, 2022 and 2021 (in thousands):

	Fair Value of Assets		Fair Value of Liabilities	
As of September 30,	2022	2021	2022	2021
Derivatives not designated as hedging instruments				
Foreign exchange contracts	$ 634	$ 153	$ (230)	$ (165)
Total	$ 634	$ 153	$ (230)	$ (165)

The fair values of the forward contracts described above are recorded in the Company's accompanying Consolidated Balance Sheets as "Prepaid expenses and other current assets" and "Accrued expenses and other current liabilities".

Hedging Activities

On February 1, 2022, the Company entered into a cross-currency swap agreement to hedge the variability of exchange rate impacts between the United States dollar and the Euro. Under the terms of the cross-currency swap agreement, the Company notionally exchanged approximately $1.03 billion for approximately €915 million at a weighted average interest rate of approximately 1.196%. The designated notional amount is $960 million and the actual interest rate is 1.283%. 1.283% was in the range of the market value for that day and is the true interest rate on the notional amount. This cross-currency swap agreement expires in February 2023. The Company has designated the cross-currency swap as a hedge of net investments against one of our Euro denominated subsidiaries which requires an exchange of the notional amounts at maturity. At the maturity of the cross currency-swap, the Company will deliver a notional amount of €852 million and receive a notional amount of $960 million at an exchange rate of 1.1261.

This cross-currency swap is marked to market at each reporting period, representing the fair values of the cross-currency swap and any changes in fair value are recognized as a component of Accumulated other comprehensive items, net, on the Consolidated Statements of Comprehensive Income. Interest accrued on the cross-currency swap is recorded within interest income on the Consolidated Statements of Operations. For fiscal year ended September 30, 2022, the Company recorded a gain, net of tax of $93.0 million, to Accumulated other comprehensive income and recorded interest income of $8.2 million on this instrument.

13. Stockholders' Equity

Preferred Stock

Total number of shares of preferred stock authorized for issuance was 1,000,000 shares at September 30, 2022 and 2021, respectively. Preferred stock has a par value of $0.01 per share and may be issued at the discretion of the Board of Directors without stockholder approval with such designations, rights and preferences as the Board of Directors may determine. There were no shares of preferred stock issued or outstanding at September 30, 2022 or 2021, respectively.

Accumulated Other Comprehensive Income

The following is a summary of the components of accumulated other comprehensive income, net of tax, at September 30, 2022, 2021 and 2020 (in thousands):

	Currency Translation Adjustments	Unrealized Gains (Losses) on Available-for-Sale Securities	Unrealized Gain on Derivative asset Net of tax	Pension Liability Adjustments	Total
Balance at September 30, 2019	$ 4,184	(8)	—	(665)	3,511
Other comprehensive income (loss) before reclassifications	18,877	5	—	(503)	18,379
Amounts reclassified from accumulated other comprehensive income	—	2	—	27	29
Balance at September 30, 2020	23,061	(1)	—	(1,141)	21,919
Other comprehensive income (loss) before reclassifications	(2,922)	—	—	333	(2,589)
Amounts reclassified from accumulated other comprehensive income	—	—	—	21	21
Balance at September 30, 2021	20,139	(1)	$ —	(787)	19,351
Other comprehensive income (loss) before reclassifications	(169,266)	(10,908)	93,020	412	(86,742)
Amounts reclassified from accumulated other comprehensive income	(16,567)	—	—	42	(16,525)
Balance at September 30, 2022	$ (165,694)	$ (10,909)	$ 93,020	$ (333)	$ (83,916)

Unrealized net holding gains (losses) on available-for-sale marketable securities are reclassified from accumulated other comprehensive income into results of operations at the time of the securities' sale, as described in Note 5, "Marketable Securities." Gains (losses) related to defined benefit pension plan settlements are reclassified from accumulated other comprehensive income into results of operations at the time of the settlement. Defined benefit pension plan curtailments are recognized as reclassifications from accumulated other comprehensive income and corresponding reductions in pension liabilities and net pension cost.

14. Equity Incentive Plans

The Company's equity incentive plans are intended to attract and retain employees and provide an incentive for them to contribute to the Company's long-term growth and achievement of its long-range performance goals. The equity incentive plans consist of plans under which employees may be granted options to purchase shares of the Company's stock, restricted stock and other equity incentives. Restricted stock awards generally have a three-year vesting period. At September 30, 2022, a total of 2,431,324 shares were reserved and available for future grant under the equity incentive plans.

2020 Equity Incentive Plan

In accordance with the 2020 Equity Incentive Plan (the "2020 Plan"), the Company may grant (i) restricted stock and other stock-based awards, (ii) nonqualified stock options, and (iii) options intended to qualify as incentive stock options under Section 422 of the Internal Revenue Code. All employees of the Company or any affiliate of the Company, independent directors, consultants and advisors are eligible to participate in the 2020 Plan. The 2020 Plan provides for the issuance of an aggregate of 2,800,000 shares of common stock, including 2,500,000 shares reserved for issuance pursuant to the 2020 Plan, and up to 300,000 additional shares which may be issued pursuant to the 2020 Plan if outstanding awards granted under the 2000 Plan or the 2015 Plan are forfeited, expire or are cancelled.

Restricted Stock Unit Activity

The following table summarizes restricted stock unit activity for the fiscal year ended September 30, 2022:

	Shares	Weighted Average Grant-Date Fair Value
Outstanding at September 30, 2021	1,088,652	$ 47.35
Granted	249,685	99.62
Vested	(555,513)	39.51
Forfeited	(244,586)	64.31
Outstanding at September 30, 2022	538,238	71.99

The weighted average grant date fair value of restricted stock units granted during fiscal years 2022, 2021 and 2020 was $99.62, $71.97 and $46.52 per share, respectively. The fair value of restricted stock units vested during fiscal years 2022, 2021 and 2020 was $66.9 million, $28.4 million and $41.7 million, respectively. During fiscal years 2022, 2021 and 2020, the Company remitted $25.2 million, $9.8 million and $24.1 million, respectively, collected from employees to satisfy their tax obligations as a result of share issuances.

As of September 30, 2022, the future unrecognized stock-based compensation expense related to restricted stock units expected to vest is $12.3 million and is expected to be recognized over an estimated weighted average amortization period of 1.4 years.

The Company grants restricted stock units that vest over a required service period and /or achievement of certain operating performance goals. Restricted stock units granted with performance goals may also have a required service period following the achievement of all or a portion of the performance goals. The following table reflects restricted stock units and stock awards granted during fiscal years ended September 30, 2022, 2021 and 2020:

	Total Units	Time-Based Units	Stock Grants	Performance-Based Units
Year ended September 30, 2022	249,685	120,066	18,471	111,148
Year ended September 30, 2021	349,930	166,570	14,713	168,647
Year ended September 30, 2020	412,036	163,390	27,076	221,570

Among the total restricted stock units granted, 0, 98,783, and 119,978 shares, respectively, were granted to the employees who belong to the discontinued operations in the year ended September 30, 2022, 2021 and 2020. Subsequent to September 30, 2022, the Company cash settled stock-based awards for former employees that were conveyed with the sale of the semiconductor automation business.

Time-Based Restricted Stock Unit Grants

Restricted stock units granted with a required service period typically have three-year vesting schedules in which one-third of awards vest at the first anniversary of the grant date, one-third vest at the second anniversary of the grant date and one-third vest at the third anniversary of the grant date, subject to the award holders meeting service requirements.

Stock-Based Awards – Board of Directors

The stock-based awards, granted to the members of the Company's Board of Directors include stock awards, restricted stock awards and deferred stock and restricted stock units.

Stock awards granted during fiscal years 2022, 2021 and 2020 were vested upon issuance.

Certain members of the Board of Directors have elected to defer receiving their annual stock awards and related quarterly dividends until they attain a certain age or cease to provide services as a member of the Board of Directors. Annual deferred restricted stock units granted during fiscal years 2022, 2021 and 2020 vested upon issuance.

Performance-Based Restricted Stock Unit Grants

Performance-based restricted stock units are earned based on the achievement of performance criteria established by the Human Resources and Compensation Committee and approved by the Board of Directors. The criteria for performance-based awards are weighted and have threshold, target and maximum performance goals.

Performance-based awards granted in fiscal year 2022, 2021 and 2020 allow participants to earn 100% of restricted stock units if the Company's performance meets or exceeds its target goal for each applicable financial metric, and up to a maximum of 200% if the Company's performance for such metrics meets the maximum or stretch goal. Performance below the minimum threshold for each financial metric results in award forfeiture. Performance goals will be measured over a three-year period for each year's awards and at the end of the period to determine the number of units earned by recipients who continue to meet the service requirement. Around the third anniversary of each year's awards' grant date, the Company's Board of Directors determines the number of units earned for participants who continue to meet the service requirements on the vest date.

Employee Stock Purchase Plan

The Company maintains an employee stock purchase plan that allows its employees to purchase shares of common stock at a price equal to 85% of the fair market value of the Company's stock at the beginning or the end of the semi-annual period, whichever is lower. On February 8, 2017, the stockholders approved the 2017 Employee Stock Purchase Plan (the "2017 Plan"). The 2017 Plan allows for purchases by employees of up to 1,250,000 shares of the Company's common stock. As of September 30, 2022, 670,136 shares of common stock remain available for purchase under the

2017 Plan. During the fiscal year ended September 30, 2022 and 2021, the Company issued 82,035 shares and 106,516 shares, respectively, under the 2017 Plan.

15. Earnings per Share

The calculations of basic and diluted net income per share and basic and diluted weighted average shares outstanding are as follows for the fiscal years ended September 30, 2022, 2021 and 2020 (in thousands, except per share data):

	Year Ended September 30,		
	2022	2021	2020
Loss from continuing operations	$ (11,286)	$ (28,869)	$ (26,362)
Income from discontinued operations, net of tax	2,144,145	139,616	91,215
Net income	2,132,859	110,747	64,853
Weighted average common shares outstanding used in computing basic earnings per share	74,897	74,229	73,557
Dilutive restricted stock units	—	226	293
Weighted average common shares outstanding used in computing diluted earnings per share	74,897	74,455	73,850
Basic net income per share:			
Loss from continuing operations	$ (0.15)	$ (0.39)	$ (0.36)
Income from discontinued operations, net of tax	28.63	1.88	1.24
Basic net income per share	$ 28.48	$ 1.49	$ 0.88
Diluted net income per share:			
Loss from continuing operations	$ (0.15)	$ (0.39)	$ (0.36)
Income from discontinued operations, net of tax	28.63	1.88	1.24
Diluted net income per share	$ 28.48	$ 1.49	$ 0.88

Restricted stock units of 64,122, 24,012 and 16,695, respectively, during fiscal year 2022, 2021 and 2020 were excluded from the computation of diluted earnings per share as their effect would be anti-dilutive based on the treasury stock method.

16. Revenue from Contracts with Customers

Disaggregated Revenue

The Company disaggregates revenue from contracts with customers in a manner that depicts how the nature, amount, timing, and uncertainty of revenue and cash flows are affected by economic factors. The following is revenue by significant business line for the fiscal years ended September 30, 2022, 2021 and 2020 (in thousands):

	Year ended September 30,		
	2022	2021	2020
Significant Business Line			
Life Sciences Products	$ 199,230	$ 199,606	$ 129,759
Sample Repository Solutions	105,331	88,922	89,847
Genomic Services	250,937	225,175	168,931
Total	$ 555,498	$ 513,703	$ 388,537

The Genomics Services and SRS values for 2021 have been adjusted for certain laboratory services that were classified from SRS into Genomics Services.

Contract Balances

Accounts Receivable, Net. Accounts receivable represent rights to consideration in exchange for products or services that have been transferred by the Company, when payment is unconditional and only the passage of time is required before payment is due. Accounts receivable do not bear interest and are recorded at the invoiced amount. The Company maintains an allowance for expected credit losses representing its best estimate of probable credit losses related to its existing accounts receivable and their net realizable value. The Company determines the allowance for expected credit losses based on a number of factors, including an evaluation of customer credit worthiness, the age of the outstanding receivables, economic trends, historical experience and other information through the payment periods. Accounts receivable, net were $163.8 million and $119.9 million at September 30, 2022 and September 30, 2021, respectively.

Contract Assets. Contract assets represent rights to consideration in exchange for products or services that have been transferred by the Company, when payment is conditional on something other than the passage of time. These amounts typically relate to contracts where the right to invoice the customer is not present until completion of the contract or the achievement of specified milestones and the value of the products or services transferred exceed this constraint. Contract assets are classified as current as they convert to cash within one year. Contract asset balances which are included within "Prepaid expenses and other current assets" on the Company's Consolidated Balance Sheet, were $18.2 million and $15.3 million at September 30, 2022 and September 30, 2021, respectively.

Contract Liabilities. Contract liabilities represent the Company's obligation to transfer products or services to a customer for which consideration has been received, or for which an amount of consideration is due from the customer. Contract assets and liabilities are reported on a net basis at the contract level, depending on the contracts position at the end of each reporting period. Contract liabilities are included within "Deferred revenue" on the Company's Consolidated Balance Sheet. Contract liabilities were $39.7 million and $25.7 million at September 30, 2022 and September 30, 2021, respectively. Revenue recognized from the contract liability balance at September 30, 2021 was $13.9 million for the year ended September 30, 2022.

Remaining Performance Obligations. Remaining performance obligations represent the transaction price of unsatisfied or partially satisfied performance obligations within contracts with an original expected contract term that is greater than one year and for which fulfillment of the contract has started as of the end of the reporting period. The aggregate amount of transaction consideration allocated to remaining performance obligations as of September 30, 2022 was $80.2 million. The following table summarizes when the Company expects to recognize the remaining performance obligations as revenue, the Company will recognize revenue associated with these performance obligations as transfer of control occurs (in thousands):

	As of September 30, 2022		
	Less than 1 Year	Greater than 1 Year	Total
Remaining Performance Obligations	$ 45,365	$ 34,844	$ 80,209

Cost to Obtain and Fulfill a Contract

The Company capitalizes sales commissions when incurred if they are (i) incremental costs of obtaining a contract, (ii) expected to be recovered and (iii) have an expected amortization period that is greater than one year. As part of the Company's cumulative effect adjustment upon the initial adoption of ASC 606, incremental costs associated with obtaining a contract were capitalized and have been classified as deferred commissions within the Company's Consolidated Balance Sheet. These amounts primarily relate to sales commissions and are being amortized over a 60-month period, which represents the average period of contract performance. The Company capitalized $0.7 million of sales commissions during the fiscal year ended September 30, 2022. All other sales commissions incurred during the reporting period have been expensed as incurred. These costs are recorded within "Selling, general, and administrative" expenses on the Company's Consolidated Statement of Operations. The Company accounts for shipping and handling activities as fulfillment activities and recognize the associated expense when control of the product has transferred to the customer.

17. Significant Customers

The Company had no individual customer that accounted for more than 10% of its consolidated revenue for each of the fiscal years ended September 30, 2022, 2021 and 2020. There was no customer that accounted for more than 10% of the Company's accounts receivable balance for each of the fiscal years ended September 30, 2022, 2021 and 2020.

18. Segment and Geographic Information

Operating segments are defined as components of an enterprise that engage in business activities for which discrete financial information is available and regularly reviewed by the chief operating decision maker in deciding how to allocate resources and to assess performance. The Company's Chief Executive Officer is the Company's chief operating decision maker.

The Company operates in two reportable segments: the Life Sciences Products segment and the Life Sciences Services segment. These reportable segments also represent the Company's operating segments. The Company previously operated in three reportable segments: the Semiconductor Solutions Group segment, the Life Sciences Products segment, and the Life Sciences Services segment. As discussed in Note 3, "Discontinued Operations", our Semiconductor Solutions Group reportable segment has been classified as a discontinued operation. The sale of the semiconductor automation business, which comprised the Semiconductor Solutions Group segment, was completed on February 1, 2022. Historical information has been adjusted to reflect the new reportable segments.

Within our Life Sciences Products segment, we have developed and continue to develop automated biological sample storage solutions for operating in low temperature environments. We have a complete line up of automated stores from ambient temperatures to -190°C. Our BioStore's ™ unique design allows controlled temperature storage down to -80°C with the industry's highest throughput of sample retrieval.

Within our Life Sciences Services segment, our genomics services business advances research and development activities by gene sequencing, synthesis, editing and related services. We offer a comprehensive, global portfolio that we believe has both broad appeal in the life sciences industry and enables customers to select the best solution for their research challenges. This portfolio also offers unique solutions for key markets such as cell and gene therapy, antibody development, and biomarker discovery by addressing genomic complexity and throughput challenges. Our sample repository solutions business is a global leader in sample storage and management, and provides a full suite of reliable cold and ultra-cold chain solutions.

The Company considers adjusted operating income, which excludes charges related to amortization of completed technology, restructuring related charges and other special charges, such as impairment losses, as the primary performance metric when evaluating the business.

The following is the summary of the financial information for the Company's reportable segments for the fiscal years ended September 30, 2022, 2021 and 2020 (in thousands):

	Year Ended September 30,		
	2022	2021	2020
Revenue:			
Life Sciences Products	$ 199,230	$ 199,606	$ 129,759
Life Sciences Services	356,268	314,097	258,778
Total revenue	$ 555,498	$ 513,703	$ 388,537
Operating income:			
Life Sciences Products	$ 11,033	$ 23,094	$ (3,041)
Life Sciences Services	10,784	22,659	2,859
Reportable segment adjusted operating income	21,817	45,753	(182)
Amortization of completed technology	7,325	8,073	8,099
Restructuring related charges	—	13,364	301
Amortization of acquired intangible assets	24,965	29,299	27,276
Restructuring charges	712	385	674
Other unallocated corporate expenses	13,550	25,721	68
Total operating income	(24,735)	(31,089)	(36,600)
Interest income	20,286	632	849
Interest expense	(4,589)	(2,037)	(2,944)
Loss on extinguishment of debt	(632)	—	—
Other expenses	(266)	(16,475)	(1,597)
Loss before income taxes	$ (9,936)	$ (48,969)	$ (40,292)

Assets:	Life Sciences Products	Life Sciences Services	Total
September 30, 2022	$ 378,790	$ 849,603	$ 1,228,393
September 30, 2021	278,769	780,238	1,059,007

The following is a reconciliation of the Company's reportable segments' segment assets to the amounts presented in the accompanying Consolidated Balance Sheets as of September 30, 2022 and 2021 (in thousands):

	September 30, 2022	September 30, 2021
Segment assets	$ 1,228,393	$ 1,059,007
Cash and cash equivalents, restricted cash, and marketable securities	2,305,081	244,012
Deferred tax assets	1,169	10,043
Other assets	181,479	11,237
Assets held for sale	—	495,213
Total assets	$ 3,716,122	$ 1,819,512

Revenue from external customers is attributed to geographic areas based on locations in which customer orders are placed. Net revenue by geographic area for the fiscal years ended September 30, 2022, 2021 and 2020 are as follows (in thousands):

	Year Ended September 30,		
	2022	2021	2020
Geographic Location:			
North America	$ 373,611	$ 323,982	$ 256,174
Europe	104,824	108,805	74,155
China	48,094	45,743	34,016
Asia Pacific/ Other	28,969	35,173	24,192
Total	$ 555,498	$ 513,703	$ 388,537

The majority of the Company's net revenue in North America is generated in the United States which amounted to $370.6 million, $320.8 million and $253.5 million, respectively, during fiscal years ended September 30, 2022, 2021 and 2020.

Property, plant and equipment by geographic area as of September 30, 2022 and 2021 are as follows (in thousands):

	September 30,	
	2022	2021
North America	$ 84,852	$ 55,943
China	56,585	54,239
Europe	11,610	16,882
Asia / Pacific/ Other	1,423	3,655
	$ 154,470	$ 130,719

Property, plant and equipment located in the United States amounted to $84.8 million and $60.6 million, respectively, at September 30, 2022 and 2021.

19. Fair Value Measurements

The fair value measurement guidance establishes a fair value hierarchy which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The following levels of inputs may be used to measure fair value:

Level 1 Inputs: Quoted prices in active markets for identical assets or liabilities as of the reporting date. Active markets are those in which transactions for the asset and liability occur in sufficient frequency and volume to provide pricing information on an ongoing basis.

Level 2 Inputs: Observable inputs other than prices included in Level 1, including 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 Inputs: Unobservable inputs that are significant to the fair value of the assets or liabilities and reflect an entity's own assumptions in pricing assets or liabilities since they are supported by little or no market activity.

The Company measures certain assets, including the cost and equity method investments, at fair value on a nonrecurring basis when they are deemed to be other-than-temporarily impaired. The fair values of these investments are determined based on valuation techniques using the best information available, and may include quoted market prices, market comparables, and discounted cash flow projections. An impairment charge is recorded when the cost of the investment exceeds its fair value and this condition is determined to be other-than-temporary.

Financial Assets and Liabilities Measured at Fair Value on a Recurring Basis

The following tables summarize assets and liabilities measured and recorded at fair value on a recurring basis in the accompanying Consolidated Balance Sheets as of September 30, 2022 and 2021 (in thousands):

Description	September 30, 2022	Fair Value Measurements at Reporting Date Using: Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Cash equivalents	$ 374,804	$ 374,055	$ 749	$ —
Available-for-sale securities	1,263,782	651,800	611,982	—
Foreign exchange contracts	634	—	634	—
Net investment hedge	124,789	—	124,789	—
Total assets	$ 1,764,009	$ 1,025,855	$ 738,154	$ —
Liabilities:				
Foreign exchange contracts	230	—	230	—
Total liabilities	$ 230	$ —	$ 230	$ —

Description	September 30, 2021	Fair Value Measurements at Reporting Date Using: Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Cash equivalents	$ 21	$ 21	$ —	$ —
Available-for-sale securities	3,679	—	3,679	—
Foreign exchange contracts	153	—	153	—
Total assets	$ 3,853	$ 21	$ 3,832	$ —
Liabilities:				
Foreign exchange contracts	165	$ —	165	—
Acquisition-related contingent consideration	9,400	—	—	9,400
Total liabilities	$ 9,565	$ —	$ 165	$ 9,400

Cash Equivalents

Cash equivalents consist of money market funds and are classified within Level 1 of the fair value hierarchy because they are valued using quoted market prices in active markets. We consider all highly liquid interest-earning investments with a maturity of three months or less at the date of purchase to be cash equivalents. The fair values of these investments approximate their carrying values.

Available-For-Sale Securities

Available-for-sale securities primarily consist of municipal securities, bank certificate of deposits and U.S. government backed securities, and as such are classified as Level 1. Investments classified as Level 2 consist of debt securities that are valued using matrix pricing and benchmarking because they are not actively traded. Matrix pricing is a mathematical technique used to value securities by relying on the securities' relationship to other benchmark quoted prices.

Foreign Exchange Contracts

Foreign exchange contract assets and liabilities are measured and reported at fair value based on observable market inputs and classified within Level 2 of the fair value hierarchy due to a lack of an active market for these contracts.

Net Investment Hedge

Net investment hedge assets are measured and reported at fair value based on observable market inputs and classified within Level 2 of the fair value hierarchy due to a lack of an active market for these contracts.

Acquisition-related Contingent Consideration

Acquisition-related contingent consideration is measured and reported at fair value using the real options method based on the unobservable inputs that are significant to the fair value and classified with Level 3 of the fair value hierarchy. The amount is contingent based on the acquired business' performance for the twelve-month period ending December 31, 2021. Please refer to Note 4, "Acquisitions" for further detail. Changes in the fair value of contingent consideration resulting from a change in the underlying inputs are recognized in results of operations until the arrangement is settled.

Financial Assets and Liabilities Measured at Fair Value on a Nonrecurring Basis

During fiscal year 2022 and 2021, the Company did not record any material other-than-temporary impairments on financial assets required to be measured at fair value on a nonrecurring basis.

20. Commitments and Contingencies

Tariff Matter

In fiscal year 2021, as part of the Company's continued integration of GENEWIZ, which was acquired in November 2018, the Company initiated a review during first quarter of fiscal year 2021, with the assistance of a third-party consultant, of the transaction value that the Company has used to calculate tariffs on inter-company imports of samples shipped from its GENEWIZ business. As a result of the third-party review and in light of a new interpretation surrounding the valuation method used to calculate the estimated transaction value, the Company revised its estimate of the tariffs owed as a result and recorded a liability of $6.1 million in the second quarter of fiscal 2021. During the three months ended June 30, 2022 the Company submitted a payment in the amount of $5.9 million to the customs authorities related to November 2021 and prior periods. The customs authorities will review the Company's calculation of tariffs for these periods and determine if any further tariffs are owed. As of September 30, 2022, the accrual for these tariffs was $2.8 million, related to normal business activity. The Company does not expect to incur any significant penalties associated with the tariffs.

Purchase Commitments

At September 30, 2022, the Company has non-cancelable commitments of $66.6 million, including purchase orders for inventory of $55.6 million, and information technology related commitments of $10.9 million.

Contingencies

The Company is subject to various legal proceedings, both asserted and unasserted, that arise in the ordinary course of business. The Company cannot predict the ultimate outcome of such legal proceedings or in certain instances provide reasonable ranges of potential losses. The Company may also have certain indemnification obligations pursuant to claims made under the definitive agreement it entered into with Edwards Vacuum LLC (a member of the Atlas Copco Group) in connection with the Company's sale of its semiconductor cryogenics business in the fourth quarter of fiscal year 2018. However, as of the date of this report, the Company believes that none of these claims will have a material adverse effect on its consolidated financial position or results of operations. In the third quarter of fiscal year 2020, Edwards asserted claims for indemnification under the definitive agreement relating to alleged breaches of representations and warranties relating to customer warranty claims and inventory. The Company cannot determine the probability of any losses or outcome of these claims including the amount of any indemnifiable losses, if any, resulting from these claims at this time, however, the Company believes that none of these claims will have a material adverse effect on its consolidated financial position or results of operations. If the resolution of these claims results in indemnifiable losses in excess of the applicable indemnification deductibles and indemnification escrow established

under the definitive agreement, Edwards would be required to seek recovery under the representation and warranty insurance Edwards obtained in connection with the closing of the transaction. The Company believes that any indemnifiable losses in excess of the applicable deductibles and indemnification escrow established in the definitive agreement would be covered by such insurance. If Edwards is unable to obtain recovery under its insurance, however, it could seek recovery of such indemnifiable losses, if any, directly from the Company. In the event of unexpected subsequent developments and given the inherent unpredictability of these matters, there can be no assurance that the Company's assessment of any claim will reflect the ultimate outcome, and an adverse outcome in certain matters could, from time to time, have a material adverse effect on the Company's consolidated financial position or results of operations in particular quarterly or annual periods.

21. Subsequent Events

Acquisition completed after fiscal year end

On October 3, 2022, subsequent to our fiscal 2022 year end, the Company acquired B Medical Systems S.á r.l. and its subsidiaries ("B Medical"), a market leader in temperature-controlled storage and transportation solutions that enables the delivery of life-saving treatments to more than 150 countries worldwide. This acquisition complements the Company's cold chain capabilities, adding differentiated solutions for reliable and traceable transport of temperature-sensitive specimens. The Company paid a total initial cash purchase price at closing of $422 million, as adjusted for cash acquired and other items pursuant to the Agreement. The Seller is eligible to earn up to approximately $50 million in contingent consideration based upon achievement of certain financial metrics by B Medical and its subsidiaries. In addition, the company paid down B Medical's outstanding debt of $43.1 million prior to September 30, 2022, classified in prepaid assets, and recorded short term restricted cash of $381 million to complete the purchase on October 3, 2022.

The Company is in the process of performing an allocation of the purchase price to individual assets and liabilities.

Share Repurchase Program

On September 29, 2015, our Board of Directors approved a share repurchase program for up to $50 million of our common stock, or the 2015 Repurchase Program. On November 4, 2022, our Board of Directors terminated the 2015 Repurchase Program and approved a new share repurchase program authorizing the repurchase of up to $1.5 billion of our common stock, or the 2022 Repurchase Program. Repurchases under the 2022 Repurchase Program may be made in the open market or through privately negotiated transactions (including under an accelerated share repurchase, or ASR, agreement), or by other means, including through the use of trading plans intended to qualify under Rule 10b5-1 under the Securities Exchange Act of 1934, as amended, subject to market and business conditions, legal requirements, and other factors. We are not obligated to acquire any particular amount of common stock under the 2022 Repurchase Program, and share repurchases may be commenced or suspended at any time at our discretion. As part of the 2022 Repurchase Program, we expect to enter into an ASR agreement for the repurchase of up to $500 million of our common stock. There were no repurchases of our common stock during the fiscal year ended September 30, 2022, and through the date of the filing.

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

Not applicable.

Item 9A. ***Controls and Procedures***

Evaluation of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our chief executive officer and chief financial officer, we conducted an evaluation of our disclosure controls and procedures, as such term is defined under Rule 13a-15(e) promulgated under the Exchange Act. Disclosure controls and procedures are designed to ensure that information required to be disclosed by us in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and that such information is accumulated and communicated to management, including the chief executive officer and chief financial officer, as appropriate, to allow timely decisions regarding required disclosure. Based upon this evaluation, our chief executive officer and our chief financial officer concluded that our disclosure controls and procedures were effective as of September 30, 2022, the end of the period covered by this Form 10-K.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act, as a process designed by, or under the supervision of our chief executive and chief 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 in the United Sates, or GAAP and includes those policies and procedures that:

- pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and disposition of our assets;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that our receipts and expenditures are being made only in accordance with authorization 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.

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

Under the supervision and with the participation of our management, including our chief executive officer and chief financial officer, we conducted an assessment of the effectiveness of our internal control over financial reporting as of September 30, 2022. In making this assessment, we used the criteria set forth in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations (COSO) of the Treadway Commission. Based on this evaluation, management concluded that the Company's internal control over financial reporting was effective as of September 30, 2022.

The effectiveness of our internal control over financial reporting as of September 30, 2022 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which appears in Item 8, "Financial Statements and Supplementary Data" of this Form 10-K.

Changes in Internal Control Over Financial Reporting

There were no changes in internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the fiscal fourth quarter ended September 30, 2022, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. ***Other Information***

None.

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

Not applicable.

PART III

Item 10. ***Directors, Executive Officers and Corporate Governance***

The information required by this Item 10 is contained in our definitive proxy statement for our 2023 annual meeting of stockholders to be filed by us within 120 days after the close of our fiscal year, or the 2023 Proxy Statement, under the captions "Proposal No. 1 Election of Directors," ["Delinquent Section 16(a) Reports,"] "Other Matters-Standards of Conduct," "Other Matters-Stockholder Proposals and Recommendations for Director" and "Corporate Governance" and is incorporated herein by reference.

Item 11. ***Executive Compensation***

The information required by this Item 11 is contained under the captions "Corporate Governance," "Compensation of Director" and "Executive Officers" in the 2023 Proxy Statement to be filed by us within 120 days after the close of our fiscal year and is incorporated herein by reference.

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

The information required by this Item 12 is contained under the captions "Security Ownership of Certain Beneficial Owners and Management" and "Equity Compensation Plan Information" in the 2023 Proxy Statement to be filed by us within 120 days after the close of our fiscal year and is incorporated herein by reference.

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

The information required by this Item 13 is contained under the captions "Related Party Transactions," "Corporate Governance" and "Compensation of Directors" in the 2023 Proxy Statement to be filed by us within 120 days after the close of our fiscal year and is incorporated herein by reference.

Item 14. ***Principal Accountant Fees and Services***

The information required by this Item 14 is contained under the caption "Independent Auditor Fees and Other Matters" in the 2023 Proxy Statement to be filed by us within 120 days after the close of our fiscal year and is incorporated herein by reference.

Part IV

Item 15. ***Exhibits and Financial Statement Schedules***

(a) Financial Statements and Financial Statement Schedules

- Consolidated Financial Statements of the Company and the related notes are included under Part II, Item 8, "Financial Statements and Supplementary Data" of this Form 10-K.
- Other financial statement schedules are omitted because of the absence of conditions under which they are required or because the required information is given in the supplementary Consolidated Financial Statements or notes thereto.

(b) Exhibits

Exhibit No.	Description
2.01*	Sales and Purchase Agreement, dated October 5, 2017, by and among Brooks Automation Limited and the shareholders of 4titude Ltd. (incorporated herein by reference to Exhibit 10.27 of the Company's Annual Report on Form 10-K, filed on November 17, 2017).
2.02*	Agreement of Merger, dated as of September 26, 2018, by and among the Company, GENEWIZ Group, Darwin Acquisition Company, and Shareholder Representative Services L.L.C. (incorporated herein by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K, filed on November 15, 2018).
2.03*	Asset Purchase Agreement, dated August 27, 2018, among the Company, Edwards Vacuum LLC, and for certain sections thereof, Atlas Copco AB (incorporated herein by reference to Exhibit 10.29 to the Company's Annual Report on Form 10-K, filed on November 29, 2018).
2.04	Amendment No. 1, dated as of February 12, 2019, to Asset Purchase Agreement dated as of August 27, 2018, among the Company, Edwards Vacuum LLC, and for certain sections, Atlas Copco AB (incorporated herein by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K, filed on February 13, 2019).
2.05*	Amendment No. 2, dated June 28, 2019, to Asset Purchase Agreement dated as of August 27, 2018, among the Company, Edwards Vacuum LLC, and for certain sections, Atlas Copco AB (incorporated herein by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K, filed on July 5, 2019).
2.06*	Equity Interest Purchase Agreement, dated as of September 20, 2021, by and between the Company and Altar BidCo, Inc. (incorporated herein by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K, filed on September 21, 2021).
2.07	First Amendment to the Equity Interest Purchase Agreement, dated as of January 31, 2022, by and between the Company and Altar BidCo, Inc. (incorporated herein by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K, filed on February 1, 2022).
2.08*+	Agreement on the Sale and Transfer of Shares, dated as of June 7, 2022, by and among Azenta Germany GmbH, Thomas Barkey, Swissfinity I Beteiligungs and Christian Barkey (incorporated herein by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K, filed on June 8, 2022).
2.09*+	Share Purchase Agreement, dated as of August 8, 2022, by and among Azenta, Inc., Azenta Luxembourg S.á r.l. and B Medical Systems Holding S.A. (incorporated herein by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K, filed on August 10, 2022).

3.01	Restated Certificate of Incorporation of the Company (incorporated herein by reference to Exhibit 3.01 to the Company's Registration Statement on Form S-3 (Reg. No. 333-189582), filed on June 25, 2013).
3.02	Certificate of Amendment to the Certificate of Incorporation of the Company, effective as of December 1, 2021 (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K filed on December 1, 2021).
3.03	Amended and Restated Bylaws of the Company, effective as of December 1, 2021 (incorporated by reference to Exhibit 3.2 to the Current Report on Form 8-K filed on December 1, 2021).
4.01	Specimen Certificate for shares of the Company's common stock (incorporated herein by reference to the Company's Registration Statement on Form S-3 (Reg. No. 333-88320), filed on May 15, 2002).
4.02	Description of Securities (incorporated herein by reference to Exhibit 4.02 of the Company's Annual Report on Form 10-K, filed on December 17, 2019).
10.01**	Form of Indemnification Agreement for directors and officers of the Company (incorporated herein by reference to Exhibit 10.02 of the Company's Annual Report on Form 10-K, filed on November 17, 2017).
10.02**	Employment Agreement, effective as of April 5, 2010, by and between the Company and Stephen S. Schwartz (incorporated herein by reference to Exhibit 10.01 to the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2010, filed on May 6, 2010).
10.03**	Offer letter, dated September 5, 2013, between the Company and Lindon G. Robertson (incorporated herein by reference to Exhibit 10.03 of the Company's Annual Report on Form 10-K, filed on December 17, 2019).
10.04**	Letter Agreement, dated June 4, 2015, between the Company and Lindon G. Robertson (incorporated herein by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K, filed on June 9, 2015).
10.05**	Offer Letter, dated June 12, 2014 between the Company and David C. Gray (incorporated herein by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended December 31, 2014, filed on February 5, 2015).
10.06**	Form of Non-Competition Agreement (incorporated herein by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K, filed on June 9, 2015).
10.07**	Form of Change in Control Agreement (incorporated herein by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K, filed on June 9, 2015).
10.08**	Second Amended and Restated 2000 Equity Incentive Plan, restated as of May 7, 2013 (incorporated herein by reference to Exhibit 10.01 to the Company's Current Report on form 8-K, filed on May 9, 2013).
10.09**	2017 Employee Stock Purchase Plan (incorporated herein by reference to 10.1 to the Company's Current Report on Form 8-K filed on February 13, 2017).
10.10**	2015 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K, filed on February 5, 2015).

10.11**	2020 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K, filed on February 1, 2021).
10.12**	Form of Restricted Stock Unit Award Notice under the 2000 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.18 to the Company's Annual Report on Form 10-K, as filed on November 28, 2011).
10.13**	Form of Restricted Stock Unit Award Notice under the 2015 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.17 to the Company's Annual Report on Form 10-K, filed on November 17, 2017).
10.14**	Form of Restricted Stock Unit Award Notice under the 2020 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.17 to the Company's Annual Report on Form 10-K, filed on November 24, 2021).
10.15**	Executive Performance-Based Variable Compensation Plan (incorporated herein by reference to Exhibit 10.01 to the Company's Current Report on Form 8-K, filed on January 29, 2016).
10.16**	Non-Employee Directors Stock Grant/Restricted Stock Unit Election Form under the 2000 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.42 to the Company's Annual Report on Form 10-K, filed on November 23, 2010).
10.17**	Non-Employee Director Restricted Stock Unit Deferral Election Form under the 2015 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.20 of the Company's Annual Report on Form 10-K, filed on November 17, 2017).
10.18**	Non-Employee Director Restricted Stock Unit Deferral Election Form under the 2020 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.21 to the Company's Annual Report on Form 10-K, filed on November 24, 2021).
10.19**	Azenta, Inc. Amended and Restated Deferred Compensation Plan, as amended (incorporated herein by reference to Exhibit 10.21 of the Company's Annual Report on Form 10-K, filed on November 17, 2017).
10.20	Standard Commercial Lease (11 Elizabeth Drive, Chelmsford, Massachusetts), dated February 1, 2022, by and between Azenta, Inc. and Altar BidCo, Inc (incorporated herein by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K, filed on February 1, 2022).
10.21	Standard Commercial Lease (15 Elizabeth Drive, Chelmsford, Massachusetts), dated February 1, 2022, by and between Azenta, Inc. and Altar BidCo, Inc (incorporated herein by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K, filed on February 1, 2022).
21.01	Subsidiaries of the Company.
23.01	Consent of PricewaterhouseCoopers LLP
31.01	Certification of the Company's Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.02	Certification of the Company's Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32	Certification of the Company's Principal Executive Officer and Principal Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

101	The following material from the Company's Annual Report on Form 10-K, for the year ended September 30, 2022, formatted in iXBRL (Inline eXtensible Business Reporting Language): (i) the Consolidated Balance Sheets; (ii) the Consolidated Statements of Operations; (iii) the Consolidated Statements of Comprehensive Income; (iv) the Consolidated Statements of Cash Flows; (v) the Consolidated Statements of Changes in Equity; and (vi) the Notes to Consolidated Financial Statements. The instance document does not appear in the Interactive Data File because XBRL tags are embedded in the iXBRL document.
104	Cover Page Interactive Data File (formatted as iXBRL and contained in Exhibit 101).

* Certain schedules and exhibits have been omitted from this Exhibit pursuant to Item 601(a)(5) of Regulation S-K. Azenta, Inc. will furnish a copy of any omitted schedule or exhibit to the U.S. Securities and Exchange Commission or its staff upon request.

** Management contract, compensatory plan or agreement.

+ Certain confidential portions (indicated by brackets and asterisk) have been omitted from this Exhibit.

Item 16. ***Form 10-K Summary***

None.

SIGNATURES

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

AZENTA, INC.

By: /S/ STEPHEN S. SCHWARTZ
Stephen S. Schwartz
President and Chief Executive Officer

Date: November 25, 2022

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

Signature	Title	Date
/S/ STEPHEN S. SCHWARTZ Stephen S. Schwartz	Director, President and Chief Executive Officer (Principal Executive Officer)	November 25, 2022
/S/ LINDON G. ROBERTSON Lindon G. Robertson	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	November 25, 2022
/S/ VANDANA SRIRAM Vandana Sriram	Senior Vice President - Finance and Corporate Controller (Principal Accounting Officer)	November 25, 2022
/S/ FRANK E. CASAL Frank E. Casal	Director	November 25, 2022
/S/ ROBYN C. DAVIS Robyn C. Davis	Director	November 25, 2022
/S/ JOSEPH R. MARTIN Joseph R. Martin	Director	November 25, 2022
/S/ ERICA J. MCLAUGHLIN Erica J. McLaughlin	Director	November 25, 2022
/S/ KRISHNA G. PALEPU Krishna G. Palepu	Director	November 25, 2022
/S/ MICHAEL ROSENBLATT Michael Rosenblatt	Director	November 25, 2022
/S/ ALFRED WOOLLACOTT III Alfred Woollacott III	Director	November 25, 2022
/S/ MARK S. WRIGHTON Mark S. Wrighton	Director	November 25, 2022
/S/ ELLEN M. ZANE Ellen M. Zane	Director	November 25, 2022

EXHIBIT 21.01

AZENTA, INC.
SUBSIDIARIES OF THE REGISTRANT

Legal Entity	**Jurisdiction**
Abeyatech LLC	USA
Azenta Beijing Technologies Limited	China
Azenta (Guangzhou) Life Science Co., Ltd.	China
Azenta Germany GmbH	Germany
Azenta Japan Corp.	Japan
Azenta Life Sciences Canada, Inc.	Canada
Azenta Luxembourg SARL	Luxembourg
Azenta (Nanjing) Life Science Technologies Co., Ltd.	China
Azenta Switzerland AG	Switzerland
Azenta (Shanghai) Life Science Co. Ltd.	China
Azenta Singapore Pte Ltd.	Singapore
Azenta (Tianjin) Biotechnology Co., Ltd.	China
Azenta UK Ltd	UK
Azenta US, Inc.	USA
Barkey Beteiligungsgesellschaft mbH	Germany
Barkey Corporation	USA
Barkey GmbH & Co. KG	Germany
Barkey Holding GmbH	Germany
Barkey (Shanghai) Electronic Technology Co. Ltd.	China
BioSpeciman Corporation	Canada
Cedrex AS	Denmark
GENEWIZ Germany GmbH	Germany
GENEWIZ Group	USA
GENEWIZ France Ltd.	France
GENEWIZ Inc.	USA
GENEWIZ LLC	USA
GENEWIZ (Suzhou), Ltd.	China
GENEWIZ UK Ltd.	UK
RURO, Inc.	USA

Exhibit 23.01

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-252725, 333-202005, 333-216312, 333-221826, 333-123242 and 333-142873) of Azenta, Inc. of our report dated November 25, 2022, relating to the consolidated financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10 K.

/s/PricewaterhouseCoopers LLP
Boston, Massachusetts
November 25, 2022

EXHIBIT 31.01

CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Stephen S. Schwartz, certify that:

1. I have reviewed this annual report on Form 10-K of Azenta, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) 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(s) 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.

/s/ STEPHEN S. SCHWARTZ
Stephen S. Schwartz
Chief Executive Officer

Date: November 25, 2022

EXHIBIT 31.02

CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Lindon G. Robertson, certify that:

1. I have reviewed this annual report on Form 10-K of Azenta, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) 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(s) 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.

/s/ LINDON G. ROBERTSON
Lindon G. Robertson
Executive Vice President and Chief Financial Officer

Date: November 25, 2022

EXHIBIT 32

CERTIFICATION

PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002 (SUBSECTIONS (A) AND (B) OF SECTION 1350, CHAPTER 63 OF TITLE 18, UNITED STATES CODE)

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code), the undersigned officer of Azenta, Inc., a Delaware corporation (the "Company"), does hereby certify that:

(1) The Annual Report on Form 10-K for the year ended September 30, 2022 of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Annual Form 10-K fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ STEPHEN S. SCHWARTZ
Stephen S. Schwartz
Director and Chief Executive Officer
(Principal Executive Officer)

Dated: November 25, 2022

/s/ LINDON G. ROBERTSON
Lindon G. Robertson
Executive Vice President and Chief Financial Officer
(Principal Financial Officer)

Dated: November 25, 2022

A signed original of this written statement required by Section 906 has been provided to Azenta, Inc. and will be retained by Azenta, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.