UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 10-K

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

For the fiscal year ended January 1, 2023

or

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

For the transition period from to

Commission file number: 001-35406

Illumina, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**33-0804655**
(State or other jurisdiction of incorporation or organization)	*(I.R.S. Employer Identification No.)*

5200 Illumina Way, San Diego, CA 92122
(Address of principal executive offices) (Zip code)
Registrant's telephone number, including area code: **(858) 202-4500**

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.01 par value	ILMN	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 Section 15(d) of the Act. Yes ☐ No ☑

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T 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, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

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 13a 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 Rule 12b-2 of the Exchange Act). Yes ☐ No ☑

As of February 10, 2023, there were 158.0 million shares (excluding 39.9 million shares held in treasury) of the registrant's common stock outstanding. The aggregate market value of the common stock held by non-affiliates of the registrant as of July 3, 2022 (the last business day of the registrant's most recently completed second fiscal quarter), based on the closing price for the common stock on The Nasdaq Global Select Market on July 1, 2022 (the last trading day before July 3, 2022), was $26.1 billion. This amount excludes an aggregate of approximately 20.7 million shares of common stock held by officers and directors and each person known by the registrant to own 10% or more of the outstanding common stock. Exclusion of shares held by any person should not be construed to indicate that such person possesses the power, directly or indirectly, to direct or cause the direction of the management or policies of the registrant, or that the registrant is controlled by or under common control with such person.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement for the 2023 annual meeting of stockholders are incorporated by reference into Items 10 through 14 of Part III of this Report.

ILLUMINA, INC.

FORM 10-K
FOR THE FISCAL YEAR ENDED JANUARY 1, 2023

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See "Form 10-K Cross-Reference Index" within Other Key Information for a cross-reference to the parts and items requirements of the Securities and Exchange Commission Annual Report on Form 10-K.

Consideration Regarding Forward-Looking Statements

This annual report on Form 10-K contains, and our officers and representatives may from time to time make, "forward-looking statements" within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. Words such as: "anticipate," "intend," "plan," "goal," "seek," "believe," "continue," "project," "estimate," "expect," "strategy," "future," "likely," "may," "potential," "predict," "should," "will," or similar words or phrases, or the negatives of these words, may identify forward-looking statements, but the absence of these words does not necessarily mean that a statement is not forward looking. Examples of forward-looking statements include, among others, statements we make regarding:

- our expectations as to our future financial performance, results of operations, or other operational results or metrics;
- the benefits that we expect will result from our business activities and certain transactions we have completed, or may complete, such as product introductions, increased revenue, decreased expenses, and avoided expenses and expenditures;
- our expectations of the effect on our financial condition of claims, litigation, contingent liabilities, and governmental investigations, proceedings, and regulations;
- our strategies or expectations for product development, market position, financial results, and reserves;
- our expectations regarding the outcome of the legal and regulatory proceedings, including any related appeals, related to our acquisition of GRAIL, Inc. (GRAIL) and other actions that may be taken or pursued by the European Commission, the U.S. Federal Trade Commission (FTC) and/or other governmental or regulatory authorities in connection with such acquisition;
- the interim measures order imposed by the European Commission, the duration and impact of such order on Illumina and GRAIL, and the appointment of a monitoring trustee to monitor our compliance with such order;
- the FTC's complaint counsel's appeal of an administrative law judge's decision on September 1, 2022 related to our acquisition of GRAIL and the pending decision of the full FTC;
- the prohibition decision adopted by the European Commission on September 6, 2022 (the Prohibition Decision), informing us of its decision to prohibit our acquisition of GRAIL, and a Statement of Objections issued by the European Commission on December 5, 2022, informing us of the order it intends to adopt requiring us (among other things) to divest GRAIL (the EC Divestment Decision); and
- other expectations, beliefs, plans, strategies, anticipated developments, and other matters that are not historical facts.

Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based only on our current beliefs, expectations, and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy, and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks, and changes in circumstances that are difficult to predict and many of which are outside of our control. Our actual results and financial condition may differ materially from those indicated in the forward-looking statements. Therefore, you should not rely on any of these forward-looking statements. Important factors that could cause our actual results and financial condition to differ materially from those indicated in the forward-looking statements include, among others, the following:

- our expectations and beliefs regarding prospects and growth for our business and the markets in which we operate;
- the timing and mix of customer orders among our products and services;
- challenges inherent in developing, manufacturing, and launching new products and services, including expanding manufacturing operations and reliance on third-party suppliers for critical components;
- the impact of recently launched or pre-announced products and services on existing products and services;

- risks and uncertainties regarding the legal and regulatory proceedings, including any related appeals, relating to our acquisition of GRAIL and our ability to achieve the expected benefits of such acquisition and other actions that have been or may be taken or pursued by the European Commission, the U.S. Federal Trade Commission and/or other governmental or regulatory authorities in connection with such acquisition;

- the interim measures order imposed by the European Commission, the duration and impact of such order on Illumina and GRAIL, which impact may include material and adverse effects on benefits we expect to achieve as a result of the acquisition of GRAIL, additional costs or liabilities, loss of revenue and other adverse effects on our business, financial condition and results of operations;

- our compliance with the terms of the interim measures order imposed by the European Commission, which is monitored by an appointed monitoring trustee, and which is burdensome to implement and administer, and the risk that the European Commission could impose or seek to impose fines and other penalties for alleged noncompliance with such terms;

- the anticipated EC Divestment Decision requiring us to divest GRAIL, the terms and conditions thereof (including with respect to a divestiture of GRAIL), and the timing of and the risks, costs and business disruptions (including the diversion of management's attention) associated with any such divestiture, the announcement, pendency or implementation thereof or any associated legal or regulatory proceedings or obligations, and other uncertainties related to our compliance (or ability to comply) with the EC Divestment Decision, which may adversely affect us and our business, including current plans and operations, financial condition and results of operations;

- any negative effects of the announcement, pendency or implementation of the Prohibition Decision or the EC Divestment Decision and/or of any divestiture of GRAIL on the market price of our common stock and on our operating results;

- risks associated with third-party contracts or other agreements containing provisions that might be implicated by any divestiture of GRAIL, including our obligations with respect to contingent value rights (the CVRs) issued by us in connection with the GRAIL acquisition and the risks that we will be unable to fully discharge such obligations in connection with a divestiture of GRAIL, that such divestiture will result in a change in obligor on the CVRs and/or of other consequences related thereto, which may adversely affect us and our business and/or the market value of the CVRs;

- the risk of adverse effects resulting from additional potential litigation associated with the acquisition of GRAIL;

- the assumptions underlying our critical accounting policies and estimates;

- our assessments and estimates that determine our effective tax rate;

- our assessments and beliefs regarding the outcome of pending legal proceedings and any liability that we may incur as a result of those proceedings;

- uncertainty, or adverse economic and business conditions, including as a result of slowing or uncertain economic growth, COVID-19 pandemic mitigation measures, or armed conflict; and

- other factors detailed in our filings with the SEC, including the risks, uncertainties, and assumptions described in "Risk Factors" within the Business & Market Information section of this report, or in information disclosed in public conference calls, the date and time of which are released beforehand.

Any forward-looking statement made by us in this annual report on Form 10-K is based only on information currently available to us and speaks only as of the date on which it is made. We undertake no obligation, and do not intend, to publicly update any forward-looking statement, whether written or oral, that may be made from time to time, or to review or confirm analysts' expectations, or to provide interim reports or updates on the progress of any current financial quarter, in each case whether as a result of new information, future developments, or otherwise.

Available Information

Our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and all amendments to those reports are available free of charge on our website, www.illumina.com. The information on our website is not incorporated by reference into this report. Such reports are made available as soon as reasonably practicable after filing with, or furnishing to, the SEC. The SEC also maintains an Internet site at www.sec.gov that contains reports, proxy and information statements, and other information regarding issuers that electronically file with the SEC. Copies of our annual report on Form 10-K will be made available, free of charge, upon written request.

Unless the context requires otherwise, references in this annual report on Form 10-K to “Illumina,” the “Company,” “we,” “us,” and “our” refer to Illumina, Inc. and its consolidated subsidiaries.

Our fiscal year is the 52 or 53 weeks ending the Sunday closest to December 31, with quarters of 13 or 14 weeks ending the Sunday closest to March 31, June 30, September 30, and December 31. References to 2022, 2021, and 2020 refer to fiscal years ended January 1, 2023, January 2, 2022, and January 3, 2021, respectively. Fiscal years 2022 and 2021 were both 52 weeks and fiscal year 2020 was 53 weeks.

BUSINESS & MARKET INFORMATION

BUSINESS OVERVIEW

We are a global leader in sequencing- and array-based solutions for genetic and genomic analysis. Our products and services serve customers in a wide range of markets, enabling the adoption of genomic solutions in research and clinical settings. We were incorporated in California in April 1998 and reincorporated in Delaware in July 2000. Our principal executive offices are located at 5200 Illumina Way, San Diego, California 92122. Our telephone number is (858) 202-4500.

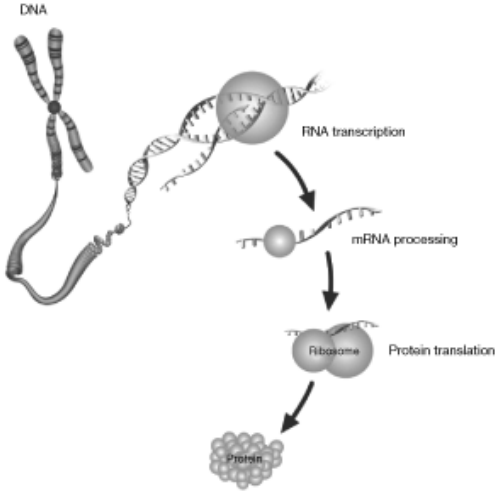
Our customers include leading genomic research centers, academic institutions, government laboratories, and hospitals, as well as pharmaceutical, biotechnology, commercial molecular diagnostic laboratories, and consumer genomics companies.

Our portfolio of integrated sequencing and microarray systems, consumables, and analysis tools is designed to accelerate and simplify genetic analysis. This portfolio addresses the range of genomic complexity, price points, and throughput, enabling customers to select the best solution for their research or clinical application.

On August 18, 2021, we acquired GRAIL, a healthcare company focused on early detection of multiple cancers. GRAIL's Galleri blood test detects various types of cancers before they are symptomatic. We believe our acquisition of GRAIL will accelerate the adoption of next-generation sequencing (NGS) based early multi-cancer detection tests, enhance our position in Clinical Genomics, and increase our directly accessible total addressable market. The acquisition is subject to ongoing legal proceedings. Currently, GRAIL must be held and operated separately and independently from Illumina pursuant to interim measures ordered by the European Commission, which prohibited our acquisition of GRAIL on September 6, 2022. See note "4. Acquisitions, Goodwill and Intangible Assets" and note "8. Legal Proceedings" for further details. We have included the financial results of GRAIL in our consolidated financial statements from the date of acquisition.

Genetics Primer

The instruction set for all living cells is encoded in deoxyribonucleic acid, or DNA. The complete set of DNA for any organism is referred to as its genome. DNA contains small regions called genes, which comprise a string of nucleotide bases labeled A, C, G, and T, representing adenine, cytosine, guanine, and thymine, respectively. These nucleotide bases occur in a precise order known as the DNA sequence. When a gene is "expressed," a copy of a portion of its DNA sequence called messenger RNA (mRNA) is used as a template to direct the synthesis of a particular protein. Proteins, in turn, direct all cellular function. The illustration below is a simplified gene expression schematic.



Variations among organisms are due, in large part, to differences in their DNA sequences. Changes can result from insertions, deletions, inversions, translocations, or duplications of nucleotide bases. These changes may result in certain genes becoming overexpressed (excessive protein production), underexpressed (reduced protein production), or silenced altogether, sometimes triggering changes in cellular function. The most common form of variation in humans is called a single nucleotide polymorphism (SNP), which is a base change in a single position in a DNA sequence. Another type of variation, copy number variations (CNVs), occur when there are fewer or more copies of certain genes, segments of a gene, or stretches of DNA.

In humans, genetic variation accounts for many of the physical differences we see (e.g., height, hair, eye color, etc.). Genetic variations also can have medical consequences affecting disease susceptibility, including predisposition to complex genetic diseases such as cancer, diabetes, cardiovascular disease, and Alzheimer's disease. They can affect individuals' response to certain drug treatments, causing them to respond well, experience adverse side effects, or not respond at all.

Scientists are studying these variations and their consequences in humans, as well as in a broad range of animals, plants, and microorganisms. Such research takes place in government, university, pharmaceutical, biotechnology, and agrigenomics laboratories around the world, where scientists expand our knowledge of the biological functions essential for life. Beginning at the genetic level, our tools are used to elucidate the relationship between gene sequence and biological processes. Researchers who investigate human and non-human genetic variation to understand the mechanisms of disease are enabling the development of more effective diagnostics and therapeutics. They also provide greater insight into genetic variation in plants (e.g., food and biofuel crops) and animals (e.g., livestock and domestic), enabling improvements in crop yields and animal breeding programs.

By empowering genetic analysis and facilitating a deeper understanding of genetic variation and function, our tools advance disease research, drug development, and the creation of molecular diagnostic tests. We believe that this will trigger a fundamental shift in the practice of medicine and health care, and that the increased emphasis on preventive and predictive molecular medicine will usher in the era of precision health care.

Our Principal Markets

We target the markets and customers outlined below.

Research and Applied

Historically, our core business has been in the life sciences research market. This includes laboratories associated with universities, research centers, and government institutions, along with biotechnology and pharmaceutical companies. Researchers at these institutions use our products and services for basic and translational research across a spectrum of scientific applications, including targeted, exome, and whole-genome sequencing; genetic variation; gene expression; epigenetics; and metagenomics. NGS technologies are being adopted due to their ability to cost-effectively sequence large sample sizes quickly and accurately, generating vast amounts of high-quality data. Both private and public funding drive this research, along with global initiatives to characterize genetic variation.

Our products also serve various applied markets including consumer genomics and agrigenomics. For example, in consumer genomics, our customers use our technologies to provide personalized genetic data and analysis to individual consumers. In agrigenomics, government and corporate researchers use our products and services to explore the genetic and biological basis for productivity and nutritional constitution in crops and livestock. Researchers can identify natural and novel genomic variation and deploy genome-wide marker-based applications to accelerate breeding and production of healthier and higher-yielding crops and livestock.

Clinical

We are focused on enabling translational and clinical markets through the introduction of best-in-class sequencing technology. Further, we are developing sample-to-answer solutions to catalyze adoption in the clinical setting, including in reproductive and genetic health and oncology. In reproductive health, our primary focus is driving noninvasive prenatal testing (NIPT) adoption globally through our technology, which identifies fetal chromosomal abnormalities by analyzing cell-free DNA in maternal blood. Our NGS technology is also accelerating rare and undiagnosed disease research to discover the genetic causes of inherited disorders by assessing many genes simultaneously. Using NGS can reduce costs compared to traditional methods of disease diagnosis, which are often expensive and inconclusive while requiring extensive testing.

Cancer is a disease of the genome, and the goal of cancer genomics is to identify genomic changes that transform a normal cell into a cancerous one. Understanding these genomic changes will improve diagnostic accuracy, increase understanding of the prognosis, and enable oncologists to target therapies to individuals. Customers in the translational and clinical oncology markets use our products to perform research that may help identify individuals who are genetically predisposed to cancer and to identify molecular changes in a tumor. We believe that circulating tumor DNA (ctDNA) will become an important clinical tool for managing oncology patients during all stages of tumor progression. Our technology is being used to research the implications of ctDNA in treatment determination, treatment monitoring, minimal residual disease, and asymptomatic screening. For example, GRAIL's Galleri blood test for early-stage cancer detection is enabled by our sequencing technology.

Our Principal Products, Services, and Technologies

Our unique technology platforms support the scale of experimentation necessary for population-scale studies, genome-wide discovery, target selection, and validation studies (see Figure 1 below). Customers use our products to analyze the genome at all levels of complexity, from targeted panels to whole-genome sequencing. A large and dynamic Illumina user community has published hundreds of thousands of customer-authored scientific papers using our technologies. Through rapid innovation, we are changing the economics of genetic research, enabling projects that were previously considered impossible, and supporting clinical advances towards precision medicine.

Most of our product sales consist of sequencing- and array-based instruments and consumables, which include reagents, flow cells, and library preparation, based on our proprietary technologies. We also perform various services for our customers. In 2022, 2021, and 2020, instrument sales represented 16%, 17%, and 13%, respectively, of total revenue; consumable sales represented 70%, 71%, and 71%, respectively, of total revenue; and services represented 14%, 12%, and 16%, respectively, of total revenue.

Figure 1: Illumina Platform Overview:

From genome-wide discovery to targeted validation and screening

	Sequencing Systems*						Sequencing and Arrays	Arrays
Instrument	NovaSeq™ X and NovaSeq X Plus systems	NovaSeq 6000 and NovaSeq 6000Dx systems	NextSeq™ 1000 and NextSeq 2000 systems	MiSeq™ and MiSeqDx systems	MiniSeq™ system	iSeq™ 100 system	NextSeq 550 and NextSeq 550Dx systems	iScan™ system
Technology	XLEAP-SBS™ chemistry DRAGEN onboard	Sequencing by synthesis (SBS) chemistry	SBS chemistry† DRAGEN onboard	SBS chemistry	SBS chemistry	SBS chemistry CMOS technology	SBS chemistry Infinium™ BeadChip	Infinium BeadChip
Features and Applications	Vast application breadth at the highest throughput, enabling the most data-intensive methods at production scale	NovaSeq 6000 system – A broad range of applications, enabling data-intensive methods NovaSeq 6000Dx system – High-throughput, FDA-regulated instrument for IVD testing and clinical research	Small whole-genome, exome, transcriptome, targeted panels, multiomic single-cell, and metagenomic sequencing	MiSeq system – Small genome, amplicon, targeted gene panel sequencing MiSeqDx system – FDA-regulated instrument for IVD testing and clinical research	Targeted DNA and RNA sequencing	Targeted, bacterial, and viral sequencing	NextSeq 550 system – Small whole-genome, exome, transcriptome sequencing, and CNV analysis NextSeq 550Dx system – FDA-regulated instrument for IVD testing and clinical research	SNP and whole-genome genotyping, CNV analysis, gene regulation, epigenetic analysis, gene expression analysis, and cytogenetic analysis

*Our HiSeq™ series of instruments, including the HiSeq 4000 and HiSeq X, have been discontinued and are not included in this chart. However, we continue to provide support and sell consumables to customers through March 31, 2024 (while supplies last).
†XLEAP-SBS chemistry available for NextSeq 1000 and NextSeq 2000 systems in 2024.

Sequencing

DNA sequencing is the process of determining the order of nucleotide bases (A, C, G, or T) in a DNA sample. Our portfolio of sequencing platforms represents a family of systems that we believe set the standard for productivity, cost-effectiveness, and accuracy among NGS technologies. Customers use our platforms to perform whole-genome, de novo, exome and RNA sequencing, and targeted resequencing of specific gene regions and genes.

Whole-genome sequencing determines the complete DNA sequence of an organism. In de novo sequencing, the goal is to sequence and assemble the genome of that sample without using information from prior sequencing of that species. In targeted resequencing, a portion of the sequence of an organism is compared to a standard or reference sequence from previously sequenced samples to identify genetic variation. Understanding the similarities and differences in DNA sequence between and within species helps us understand the function of the structures encoded in the DNA.

Our DNA sequencing technology is based on our proprietary reversible terminator-based sequencing chemistry, referred to as sequencing by synthesis (SBS) biochemistry. SBS tracks the addition of labeled nucleotides as the DNA chain is copied in a massively parallel fashion. In 2022, we announced XLEAP-SBS [M], a faster, higher quality, and more robust version of our SBS chemistry that delivers the highest level of data accuracy and performance. Our SBS sequencing technology provides researchers with a broad range of applications and the ability to sequence more than 20,000 human genomes per year.

Our sequencing platforms can generate between 500 megabases (Mb) and 16.0 terabases (Tb) (equivalent to approximately 128 human genomes) of genomic data in a single run, depending on the instrument and application.

There are different price points per gigabase (Gb) for each instrument, and for different applications, which range from small-genome, amplicon, and targeted gene-panel sequencing to population-scale whole human genome sequencing. Since we launched our first sequencing system in 2007, our systems have significantly reduced the cost of sequencing. In 2022, we announced the NovaSeq [M] X Series (NovaSeq X and NovaSeq X Plus), our new production-scale sequencing systems that can sequence a human genome for as little as $200.

Illumina informatics products play a critical role in supporting our sequencing applications and customers' needs across a range of activities, including sample preparation, instrument control and management, and post-run analysis.

Our BaseSpace Informatics Suite integrates directly with our sequencing instruments, allowing customers to manage their biological sample and sequencing runs, process and analyze the raw genomic data, and derive meaningful results. It facilitates data sharing, provides data-storage solutions and streamlines analysis through a growing number of applications developed by us and the bioinformatics community. Our DRAGEN Bio-IT Platform is used for secondary analysis and analyzes sequencing data from a variety of experiment types, including whole genomes, whole exomes, germline and somatic datasets, and RNA sequencing experiments with industry leading accuracy, speed and efficiency. Additionally, Illumina Connected Analytics is an integrated bioinformatics solution that provides a comprehensive, private, cloud-based data platform that empowers customers to manage, analyze, and explore large volumes of multi-omic data in a secure, scalable, and flexible environment.

In 2022, 2021, and 2020, total sequencing revenue comprised 91%, 91%, and 89%, respectively, of total revenue.

Arrays

Arrays are used for a broad range of DNA and RNA analysis applications, including SNP genotyping, CNV analysis, gene expression analysis, and methylation analysis, and enable the detection of millions of known genetic markers on a single array. Arrays are the primary technology used in consumer genomics applications.

Our BeadArray technology combines microscopic beads and a substrate in a proprietary manufacturing process to produce arrays that can perform many assays simultaneously. This facilitates large-scale analysis of genetic variation and biological function in a unique, high-throughput, cost-effective, and flexible manner. Using our BeadArray technology, we achieve high-throughput analysis via a high density of test sites per array and the ability to format arrays in various configurations. To serve the needs of multiple markets and market segments, we can vary the size, shape, and format of the substrate into which the beads self-assemble and create specific bead types for different applications. Our iScan System and our NextSeq 550 System can be used to image arrays.

In 2022, 2021, and 2020, total array revenue comprised 9%, 9%, and 11%, respectively, of total revenue.

Consumables

We have developed various library preparation and sequencing kits to simplify workflows and accelerate analysis. Our sequencing applications include whole-genome sequencing kits, which sequence entire genomes of any size and complexity, and targeted resequencing kits, which can sequence exomes, specific genes, RNA or other genomic regions of interest. Our sequencing kits maximize the ability of our customers to characterize the target genome accurately and are sold in various configurations, addressing a wide range of applications.

Customers use our array-based genotyping consumables for a wide range of analyses, including diverse species, disease-related mutations, and genetic characteristics associated with cancer. Customers can select from a range of human, animal, and agriculturally relevant genome panels or create their own custom arrays to investigate millions of genetic markers targeting any species.

Services

We provide whole-genome sequencing, genotyping, NIPT, and product support services. Human whole-genome sequencing services are provided through our CLIA-certified, CAP-accredited laboratory. Using our services, customers can perform whole-genome sequencing projects and microarray projects (including large-scale genotyping studies and whole-genome association studies). We also provide NIPT services through our partner laboratories that direct samples to us on a test send-out basis in our CLIA-certified, CAP-accredited laboratory. In addition, we also offer support services to customers who have purchased our products.

GRAIL

GRAIL's multi-cancer early detection test, Galleri, is designed as a screening test for adults with an elevated risk for cancer, such as those aged 50 or older, and was commercially launched in 2021 as a laboratory developed test. In addition to Galleri, GRAIL is developing solutions to help accelerate cancer diagnoses, blood-based detection for minimal residual disease, and other post-diagnostic applications.

Intellectual Property

We have an extensive intellectual property portfolio. As of January 6, 2023, excluding GRAIL, we owned or had exclusive licenses to 1,162 issued U.S. patents and 971 pending U.S. patent applications, including 58 allowed applications that have not yet issued as patents. Our issued and pending patents cover various aspects of our arrays, assays, oligo synthesis, sequencing technology, instruments, digital microfluidics, software, bioinformatics, and chemical-detection technologies, and have terms that expire between 2023 and 2043. We continue to file new patent applications to protect the full range of our technologies. We have filed or have been granted counterparts for many of these patents and applications in foreign countries.

GRAIL owns certain patent applications and intellectual property and exclusively licenses certain patents, patent applications, and other intellectual property from third parties. GRAIL's patent portfolio broadly relates to methods, techniques and chemistry used to generate and analyze data using its proprietary bioinformatics and classifiers, including, for example, cfNA sequencing, marker panels, methylation signatures, bioinformatics techniques and biologically directed machine learning classifiers, which are incorporated into GRAIL's products. As of January 3, 2023, GRAIL had exclusive licenses to more than 500 issued or granted patents and more than 300 pending patent applications globally, including more than 60 issued U.S. patents. GRAIL also owned or co-owned more than 410 pending patent applications globally, including more than 110 pending U.S. non-provisional and provisional patent applications. GRAIL's patent portfolio includes patents and patent applications related to sequencing, library preparation and enrichment, marker panels, methylation profiling, and bioinformatic techniques and classifiers. GRAIL's licensed patents and patent applications will begin to expire in 2028. The patent applications that GRAIL owns, if issued as patents, would be expected to expire at the earliest in 2037.

We protect our trade secrets, know-how, copyrights, and trademarks. Our success depends in part on obtaining patent protection for our products and processes, preserving trade secrets, patents, obtaining copyrights and trademarks, operating without infringing the proprietary rights of third parties, and acquiring licenses for technology or products. In addition, we invest in technological innovation, and we seek beneficial licensing opportunities to develop and maintain our competitive position.

We are party to various exclusive and nonexclusive license agreements and other arrangements with third parties that grant us rights to use key aspects of our sequencing and array technologies, assay methods, chemical detection methods, reagent kits, and scanning equipment. We have additional nonexclusive license agreements with various third parties for other components of our products. In most cases, the agreements remain in effect over the term of the underlying patents, may be terminated at our request without further obligation, and require that we pay customary royalties.

Research and Development

We have historically made substantial investments in research and development. Our research and development efforts prioritize continuous innovation coupled with product evolution.

Research and development expense in 2022, 2021, and 2020 was $1,321 million, $1,185 million, and $682 million, respectively. We expect research and development expense to increase during 2023 to support business growth and continuing expansion in research and product-development efforts.

Marketing and Distribution

We market and distribute our products directly to customers in North America, Europe, Latin America, and the Asia-Pacific region. In addition, we sell through life-science distributors in certain markets within Europe, the Asia-Pacific region, Latin America, the Middle East, and Africa. We expect to continue increasing our sales and distribution resources during 2023 and beyond as we launch new products and expand our potential customer base.

Manufacturing

We manufacture sequencing and array platforms and reagent kits. In 2022, we continued to increase our manufacturing capacity, and we expect to increase our manufacturing capacity again in 2023 to meet customer demand. To address increasing product complexity and volume, we continue to automate manufacturing processes to accelerate throughput and improve quality and yield. We are committed to providing medical devices and related services that consistently meet customer and applicable regulatory requirements. We adhere to access and safety standards required by federal, state, and local health ordinances, such as standards for the use, handling, and disposal of hazardous substances. Our key manufacturing and distribution facilities operate under a quality management system certified to ISO 13485.

Raw Materials

Our manufacturing operations require a wide variety of raw materials, electronic and mechanical components, chemical and biochemical materials, and other supplies. Multiple commercial sources provide many of our components and supplies, but there are some raw materials and components that we obtain from single-source suppliers. To manage potential risks arising from single-source suppliers, we believe that, if necessary, we could redesign our products using alternative components or for use with alternative reagents or develop an internal supply capability. In addition, while we attempt to keep our inventory at minimal levels, we purchase incremental inventory as circumstances warrant to protect our supply chain. If the capabilities of our suppliers and component manufacturers are limited or stopped, due to pandemics, disasters, quality, regulatory, or other reasons, it could negatively impact our ability to manufacture our products.

Competition

Although we believe that our products and services provide significant advantages over products and services currently available from other sources, we expect continued intense competition. Our competitors offer products and services for sequencing, SNP genotyping, gene expression, and molecular diagnostics markets. In some cases, we compete for the resources our customers allocate for purchasing a wide range of sequencing and non-sequencing products used to analyze genetic variation and biological function, some of which are complementary or adjacent to our own but not directly competitive; in other cases, our products face direct competition as customers choose among sequencing and non-sequencing products that are designed to address the same use case or answer the same biological question. Some of our competitors have, or will have, substantially greater financial, technical, research, and other resources than we do, along with larger, more established marketing, sales, distribution, and service organizations. In addition, they may have greater name recognition than we do in the markets we address, and in some cases a larger installed base of systems. We expect new competitors to emerge and the intensity of competition to increase. To compete effectively, we must scale our organization and infrastructure appropriately and demonstrate that our products have superior throughput, cost, and accuracy.

Segment and Geographic Information

We have two reportable segments, Core Illumina and GRAIL, as of January 1, 2023. On August 18, 2021, we acquired GRAIL, and it operates as a separate reportable segment. We have included the financial results of GRAIL in our consolidated financial statements from the date of acquisition. Core Illumina relates to our core operations,

excluding the results of GRAIL. See note "11. Segments and Geographic Data" within the Consolidated Financial Statements section of this report for further information concerning our reportable segments.

We currently sell our products to a number of customers outside the United States, including customers in other areas of North America, Latin America, Europe, China, and the Asia-Pacific region. Shipments to customers outside the United States totaled $2,294 million, or 50%, of total revenue, in 2022, compared to $2,331 million, or 52%, and $1,584 million, or 49%, in 2021 and 2020, respectively. We consider the U.S. dollar to be the functional currency of our international operations due to the primary activities of our foreign subsidiaries. We expect that sales to international customers will continue to be an important and growing source of revenue. See note "1. Organization and Significant Accounting Policies" and note "2. Revenue" within the Consolidated Financial Statements section of this report for further information concerning our foreign and domestic operations.

Backlog

Our backlog was approximately $1,030 million and $1,035 million as of January 1, 2023 and January 2, 2022, respectively. Generally, our backlog consists of orders believed to be firm as of the balance sheet date. However, we may allow customers to make product substitutions as we launch new products. The timing of shipments depends on several factors, including agreed upon shipping schedules, which may span multiple quarters, and whether the product is catalog or custom. We expect approximately 89% of our backlog as of January 1, 2023 to be shipped in 2023, approximately 7% in 2024, and the remainder thereafter. Although we generally recognize revenue when control of our products and services is transferred to our customers, some customer contracts might require us to defer revenue recognition beyond the transfer of control.

Properties

The following table summarizes the facilities leased by Core Illumina and GRAIL as of January 1, 2023, including the location and size of each principal facility and their designated use. We believe our facilities are adequate for our current and near-term needs, and we will be able to locate additional facilities, as needed.

Location	Approximate Square Feet	Operation	Lease Expiration Dates
San Diego, CA	1,090,000	Office, Lab, Manufacturing, and Distribution	2025 – 2031
San Francisco Bay Area, CA *	540,000	Office, Lab, and Manufacturing	2024 – 2033
Singapore **	588,000	Office, Lab, Manufacturing, and Distribution	2024 – 2037
Durham, NC *	201,000	Office and Lab	2033
Cambridge, United Kingdom **	197,000	Office, Lab, and Manufacturing	2023 – 2039
Madison, WI	133,000	Office, Lab, and Manufacturing	2033
Eindhoven, the Netherlands	90,000	Office and Distribution	2036
China	67,000	Office and Lab	2023 – 2026
Other *	136,000	Office	2023 – 2028

* Inc udes propert es eased by both Core I um na and GRAIL, except for our ocat on n Durham, NC, wh ch s eased ent re y by GRAIL.
** Exc udes approx mate y 111,000 square feet for wh ch the eases do not commence unt 2023 and beyond.

Human Capital

To continue as a leader in genomics, we need to harness the world's best talent and give them the opportunity to thrive. We are committed to attracting, retaining, developing, and supporting our people to enable everyone to fully contribute to our mission and deliver on the transformative power of genomics. Diversity is a competitive advantage that drives innovation in all that we do.

Our key human capital objectives include: nurture a culture of care; practice diversity and inclusion in all we do to advance equity and belonging; invest and develop our people to create a deep and diverse pipeline; and steward our employee safety and wellness.

Additional information is included in our annual Corporate Social Responsibility (CSR) Report located on our website at www.illumina.com/csr. Information on our website, including the CSR Report, shall not be deemed incorporated by reference into this Annual Report. Our annual CSR Report is guided by the reporting frameworks of the Global Reporting Initiative (GRI), Sustainable Accounting Standards Board (SASB), and the Task Force for Climate related Financial Disclosures (TCFD).

Core Illumina

As of January 1, 2023, Core Illumina's global workforce was comprised of approximately 10,200 full time employees, 60 part time employees, and 1,400 contingent workers. The regional representation includes approximately 6,300 employees in the Americas, 1,500 employees in Europe, Middle East, and Africa, and 2,400 employees in Asia-Pacific. Core Illumina's global voluntary turnover rate for 2022 was 11%. Women comprised 45% of Core Illumina's global workforce. Based on self-identification data, Core Illumina's U.S. workforce is comprised of 54% minorities. Additional details on U.S. diversity demographics for 2022 will be available in our annual CSR Report, which we expect to publish in June 2023. The annual CSR report is published on our website at www.illumina.com/csr.

GRAIL

As of January 1, 2023, GRAIL's global workforce was comprised of approximately 1,300 full time employees, the majority of which are based in the Americas, and 400 contingent workers. GRAIL's global voluntary turnover rate for 2022 was 15%. Women comprised 55% of GRAIL's global workforce.

Environmental Matters

As a global corporate citizen, we recognize the importance of the environment to a healthy, sustainable future for our business, our patients, and communities. We are committed to the protection of our employees and the environment with an approach to continuously strengthen our environmental stewardship. We believe that we are in material compliance with current applicable laws and regulations. However, we could be held liable for damages and fines should contamination of the environment or individual exposures to hazardous substances occur. In addition, we cannot predict how changes in these laws and regulations, or the development of new laws and regulations, will affect our business operations or the cost of compliance. In addition, climate change may impact our business by increasing operating costs due to additional regulatory requirements, physical risks to our facilities, energy limitations, and disruptions to our supply chain. These potential risks are accounted for in our business planning, including investment in renewable energy, reducing energy and water consumption, greenhouse gas emissions, and waste production. As part of our climate action plan, we established emission reduction targets in line with a 1.5 degree pathway and established Net Zero emission commitments by 2050, and had those targets verified by the Sciences Based Target Initiative. Additional information is included in our annual CSR Report located on our website at www.Illumina.com/csr.

Government Regulation

As we expand product lines to address the diagnosis of disease, regulation by governmental authorities in the United States and other countries will become an increasingly significant factor in development, testing, production, and marketing. Products that we develop in the molecular diagnostic markets, depending on their intended use, may be regulated as medical devices or in vitro diagnostic products (IVDs) by the FDA and comparable agencies in other countries. In the United States, certain of our products may require FDA clearance following a pre-market notification process, also known as a 510(k) clearance, or premarket approval (PMA) from the FDA. The usually shorter 510(k) clearance process, which we used for the FDA-cleared assays that are run on our FDA-regulated MiSeqDx instrument, generally takes from three to six months after submission, but it can take significantly longer. The longer PMA process, which we used for our FDA-cleared RAS panel that is also run on our MiSeqDx instrument, is typically much more costly and uncertain. It can take from 9 to 18 months after a complete filing, but it can take significantly longer and requires conducting clinical studies that are generally more extensive than those required for 510(k) clearance. All of the products that are currently regulated by the FDA as medical devices and IVDs are also subject to the FDA Quality System Regulation (QSR). Obtaining the requisite regulatory approvals, including the FDA quality system inspections that are required for PMA approval, can be expensive and may involve considerable delay.

In the U.S., the products we develop for oncology and non-invasive prenatal testing will be regulated by the PMA process. We cannot be certain which of our other planned molecular diagnostic products will be subject to the shorter 510(k) clearance process, or which of these will need to go through the PMA process.

The regulatory approval process for such products may be significantly delayed, may be significantly more expensive than anticipated, and may conclude without such products being approved by the FDA. Without timely regulatory approval, we will not be able to launch or successfully commercialize such products, which would adversely affect our earnings and competitive position. Many of the products that we are developing are the first of their kind, such as the Galleri test that has been developed by GRAIL. The regulatory approval pathways for such products, like the Galleri test, do not currently exist and therefore have a high degree of uncertainty. Core Illumina and GRAIL are separately collaborating with regulatory bodies to navigate this regulatory landscape.

Changes to the current regulatory framework, including the imposition of additional or new regulations, could arise at any time during the development or marketing of our products. This may negatively affect our ability to obtain or maintain FDA or comparable regulatory clearance or approval of our products. In addition, regulatory agencies may introduce new requirements that may change the regulatory requirements for us or our customers, or both.

If our products labeled as “For Research Use Only,” or RUO, are used, or could be used, for the diagnosis of disease, the regulatory requirements related to marketing, selling, and supporting such products could be uncertain. This is true even if such use by our customers occurs without our consent. If the FDA or other regulatory authorities assert that any of our RUO products are subject to regulatory clearance or approval, our business, financial condition, or results of operations could be adversely affected.

Our products sold as medical devices or IVDs in Europe are now regulated under the In Vitro Diagnostics Regulation (EU) 2017/746, the IVDR, that went into full enforcement in May 2022. These regulations include requirements for both presentation and review of performance data and quality-system requirements.

Certain of our products are currently available through laboratories that are certified under the Clinical Laboratory Improvements Amendments (CLIA) of 1988. These products are commonly called “laboratory developed tests,” or LDTs. For a number of years, the FDA has exercised its regulatory enforcement discretion not to regulate LDTs as medical devices if created and used within a single laboratory. However, the FDA is continually reexamining this regulatory approach and changes to the agency’s handling of LDTs could impact our business in ways that cannot be predicted at this time. We cannot predict the nature or extent of the FDA's final guidance or regulation of LDTs, in general, or with respect to our or our customers’ LDTs, in particular.

Certification of CLIA laboratories includes standards in the areas of personnel qualifications, administration, and participation in proficiency testing, patient test management, and quality control procedures. CLIA also mandates that, for high complexity labs such as ours, to operate as a lab, we must have an accreditation by an organization recognized by CLIA such as the College of Pathologists (CAP), which we have obtained and must maintain. If we were to lose our CLIA certification or CAP accreditation, our business, financial condition, or results of operations could be adversely affected. In addition, state laboratory licensing and inspection requirements may also apply to our products, which, in some cases, are more stringent than CLIA requirements.

RISK FACTORS

Our business is subject to various risks, including those described below. In addition to the other information included in this report, the following issues could adversely affect our operating results or our stock price.

Risks Relating to Research, Development, Marketing, and Sales of Products and Services

Our continued growth is dependent on continuously developing and commercializing new products.

Our target markets are characterized by rapid technological change, changes in customer needs, existing and emerging competition, strong price competition, and frequent new product introductions. Accordingly, our continued growth depends on developing and commercializing new products and services, including improving our existing products and services, in order to address evolving market requirements on a timely basis. If we fail to innovate or adequately invest in new technologies, we could lose our competitive position in the markets that we serve.

To the extent that we fail to introduce new and innovative products, or such products are not accepted in the market or suffer significant delays in development, our financial results may suffer. An inability, for technological or other reasons, to successfully develop and introduce new products on a timely basis could reduce our growth rate or otherwise have an adverse effect on our business.

In the past, we have experienced, and are likely to experience in the future, delays in the development and introduction of new products. There can be no assurance that we will keep pace with the rapid rate of change in our markets or that our new products will adequately meet the requirements of the marketplace, achieve market acceptance, or compete successfully with third-party technologies. Some of the factors affecting our ability to develop and successfully commercialize new products and services include:

- the functionality and performance of new and existing products and services;
- the timing of introduction of new products or services relative to competing products and services;
- availability, quality, and price relative to competing products and services;
- scientists' and customers' opinions of the utility of new products or services;
- citation of new products or services in published research;
- regulatory trends and approvals; and
- our ability to acquire or otherwise gain access to third party technologies, products, or businesses.

Our success depends upon the continued emergence and growth of markets for analysis of genetic variation, and continued substantial increases in the use of sequencing as the cost of sequencing declines.

The usefulness of our technologies depends in part upon the availability of genetic data and its usefulness in clinical, research, and consumer applications. We are focusing on markets for analysis of genetic variation or biological function, namely sequencing, genotyping, and gene expression profiling. These markets are relatively new and emerging, and they may not develop as quickly as we anticipate, or reach what we expect to be their full potential. Other methods of analysis of genetic variation and biological function may emerge and displace the methods we are developing. In addition, a reduction or delay in research and development budgets and government funding may adversely affect our business. For example, changes in the regulatory environment affecting life sciences and pharmaceutical companies, and budgetary pressures resulting in reduced allocations to government agencies that fund research and development activities, such as the U.S. National Institute of Health, or NIH, could adversely affect our business or results of operations.

The introduction of next-generation sequencing technologies, including ours, has reduced the cost of sequencing by a factor of more than 10,000 and reduced the sequencing time per Gb by a factor of approximately 12,000 over the last 20 years. Consequently, demand for sequencing-related products and services has increased substantially as new applications are enabled and more sequencing is done in connection with existing applications. If, as we expect, the cost of sequencing continues to fall, we cannot be sure that the demand for related products and services will increase at least proportionately as new applications are enabled or more sequencing is done in connection with existing applications. In the future, if demand for our products and services due to lower sequencing costs is less than we expect, our business, financial condition, and results of operations will be adversely affected.

Our products may be used to provide genetic information about humans, agricultural crops, other food sources, and other living organisms. The information obtained from our products could be used in a variety of applications, which may have underlying ethical, legal, and social concerns regarding privacy and the appropriate uses of the resulting information, including preimplantation genetic screening of embryos, prenatal genetic testing, genetic engineering or modification of agricultural products, or testing genetic predisposition for certain medical conditions, particularly for those that have no known cure. Our customers' implementation of our products to provide their own products and services may raise such concerns and affect our own reputation. U.S. and international governmental authorities could, for social or other purposes, call for limits on or regulation of the use of genetic testing or prohibit testing for genetic predisposition to certain conditions, particularly for those that have no known cure. Similarly, such concerns may lead individuals to refuse to use genetics tests, even if permissible. These and other ethical, legal, and social concerns about genetic testing may limit market acceptance of our technology for certain applications or reduce the potential markets for our technology, either of which could have an adverse effect on our business, financial condition, or results of operations.

If we do not successfully manage the development, manufacturing, and launch of new products or services, including product transitions, our financial results could be adversely affected.

We face risks associated with launching new products and pre-announcing products and services when the products or services have not been fully developed or tested. In addition, we may experience difficulty in managing or forecasting customer reactions, purchasing decisions, transition requirements, or programs with respect to newly-launched products (or products in development), which could adversely affect sales of our existing products. If our products and services are not able to deliver the performance or results expected by our target markets or are not delivered on a timely basis, our reputation and credibility may suffer. If we encounter development challenges or discover errors in our products late in our development cycle, we may delay the product launch date. The expenses or losses associated with unsuccessful product development or launch activities, or a lack of market acceptance of our new products, could adversely affect our business, financial condition, or results of operations.

As we announce future products or integrate new products into our portfolio, such as new instruments or instrument platforms, we face numerous risks relating to product transitions and the evolution of our product portfolio. We may be unable to accurately forecast new product demand and the impact of new products on the demand for current or established products. We may experience challenges relating to managing excess and obsolete inventories, managing new or higher product cost structures, and managing different sales and support requirements. Announcements of currently planned or other new products may cause customers to defer or stop purchasing our current or established products until new products become available. In addition, customers may defer or stop purchasing our current or established products as they assess the features and technological characteristics of new products, as compared to our current or established products, before making a financial commitment.

We face intense competition, which could render our products obsolete, result in significant price reductions, or substantially limit the volume of products that we sell.

We compete with third parties that design, manufacture, and market products and services for analysis of genetic variation and biological function and other applications using a wide range of technologies. In some cases, we compete for the resources our customers allocate for purchasing a wide range of sequencing and non-sequencing products, some of which are complementary or adjacent to our own but not directly competitive; in other cases, our products face direct competition as customers choose among sequencing and non-sequencing products that are designed to address the same use case or answer the same biological question. For example, complementary third-party sequencing technologies address use cases to which our products are not well suited. If we are unable to develop or acquire new technologies that address these complementary sequencing applications, our rate of growth and our ability to grow the overall market for sequencing could be adversely affected.

We anticipate that we will continue to face increased competition as existing companies develop new or improved products and as new companies enter the market with new technologies. One or more of our competitors may render one or more of our technologies obsolete or uneconomical. Some of our competitors have greater financial and personnel resources, broader product lines, more focused product lines, a more established customer base, more experience and broader reach in clinical markets, and more experience in research and development than we do. Furthermore, life sciences, clinical genomics, and pharmaceutical companies, which are our potential customers and strategic partners, could also develop competing products. We believe that customers in our markets display a significant amount of loyalty to their initial supplier of a particular product; therefore, it may be difficult to generate sales to potential customers who have purchased products from competitors. To the extent we are unable to be the first to develop or supply new products, our competitive position may suffer.

The market for clinical and diagnostic products, in particular, is currently limited and highly competitive, with several large companies having significant market share, intellectual property portfolios, and regulatory expertise. For example, the market for noninvasive prenatal testing is rapidly developing, and if our competitors are able to develop and commercialize products superior to or less expensive than ours or are able to obtain regulatory clearances before we do, our business could be adversely impacted. Established clinical and diagnostic companies also have an installed base of instruments in several markets, including clinical and reference laboratories, which could deter acceptance of our products. In addition, some of these companies have formed alliances with genomics companies that provide them access to genetic information that may be incorporated into their diagnostic tests, potentially creating a competitive advantage for them.

As we develop, market, or sell diagnostic tests, we may encounter delays in receipt, or limits in the amount, of reimbursement approvals and public health funding, which will impact our ability to grow revenues in the healthcare market.

Physicians and patients may not order diagnostic tests that we develop, market, sell, or enable such as our prenatal tests or GRAIL's oncology screening tests, unless third-party payors, such as managed care organizations as well as government payors such as Medicare and Medicaid and governmental payors outside of the United States, pay a substantial portion of the test price. Third-party payors are often reluctant to reimburse healthcare providers for the use of medical tests that involve new technologies or provide novel diagnostic information. In addition, third-party payors are increasingly limiting reimbursement coverage for medical diagnostic products and, in many instances, are exerting pressure on diagnostic product suppliers to reduce their prices. Reimbursement by a payor may depend on a number of factors, including a payor's determination that tests using our technologies are: not experimental or investigational; medically necessary; appropriate for the specific patient; cost-effective; supported by peer-reviewed publications; and included in clinical practice guidelines.

Since each third-party payor often makes reimbursement decisions on an individual patient basis, obtaining such approvals is a time-consuming and costly process that requires us to provide scientific and clinical data supporting the clinical benefits of each of our products. As a result, there can be no assurance that reimbursement approvals will be obtained. This process can delay the broad market introduction of new products, and could have a negative effect on our results of operations. As a result, third-party reimbursement may not be consistent or financially adequate to cover the cost of diagnostic products that we develop, market, or sell. This could limit our ability to sell our products or cause us to reduce prices, which would adversely affect our results of operations.

Even if tests are reimbursed, third-party payors may withdraw their coverage policies, cancel their contracts with our customers at any time, review and adjust the rate of reimbursement, require co-payments from patients, or stop paying for tests, which would reduce our revenues. In addition, insurers, including managed care organizations as well as government payors such as Medicare and Medicaid, have increased their efforts to control the cost, utilization, and delivery of healthcare services. These measures have resulted in reduced payment rates and decreased utilization for the clinical laboratory industry. Reductions in the reimbursement rate of payors may occur in the future. Reductions in the prices at which our tests are reimbursed could have a negative impact on our results of operations.

Risks Relating to Supply Chain, Manufacturing, and Quality

We depend on third-party manufacturers and suppliers for some of our products, or sub-assemblies, components, and materials used in our products, and if shipments from these manufacturers or suppliers are delayed or interrupted, or if the quality of the products, components, or materials supplied do not meet our requirements, we may not be able to launch, manufacture, or ship our products in a timely manner, or at all.

The complex nature of our products requires customized, precision-manufactured sub-assemblies, components, and materials that currently are available from a limited number of sources, and, in the case of some sub-assemblies, components, and materials, from only a single source. If deliveries from these vendors are delayed or interrupted for any reason, or if we are otherwise unable to secure a sufficient supply, we may not be able to obtain these sub-assemblies, components, or materials on a timely basis or in sufficient quantities or at satisfactory qualities. We may need to enter into contractual relationships with manufacturers for commercial-scale production of some of our products, in whole or in part, or develop these capabilities internally, and there can be no assurance that we will be able to do this on a timely basis, in sufficient quantities, or on commercially reasonable terms. In addition, the lead time needed to establish a relationship with a new supplier can be lengthy, and we may experience delays in meeting demand in the event we must switch to a new supplier. The time and effort required to qualify a new supplier could result in additional costs, diversion of resources, or reduced manufacturing yields, any of which would negatively impact our operating results. Accordingly, we may not be able to establish or maintain reliable, high-volume manufacturing at commercially reasonable costs. In addition, the manufacture or shipment of our products may be delayed or interrupted if the quality of the products, sub-assemblies, components, or materials supplied by our vendors does not meet our requirements. Current or future social and environmental regulations or critical issues, such as those relating to the sourcing of minerals from conflict-affected areas such as the Democratic Republic of the Congo or the need to eliminate environmentally sensitive materials from our products, could restrict the supply of components and materials used in production or increase our costs. Any delay or interruption to our manufacturing process or in shipping our products could result in lost revenue, which would adversely affect our business, financial condition, or results of operations.

If defects are discovered in our products, we may incur additional unforeseen costs, our products may be subject to recalls, customers may not purchase our products, our reputation may suffer, and ultimately our sales and operating earnings could be negatively impacted.

Our products incorporate complex, precision-manufactured mechanical parts, electrical components, optical components, and fluidics, as well as computer software and complex surface chemistry and reagents, any of which may contain or result in errors or failures, especially when first introduced. In the course of conducting our business, we must adequately address quality issues associated with our products and services, including defects in our engineering, design, and manufacturing processes, as well as defects in third-party components included in our products. In addition, new products or enhancements may contain undetected errors or performance problems that, despite testing, are discovered only after commercial shipment. Defects or errors in our products may discourage customers from purchasing our products. The costs incurred in correcting any defects or errors may be substantial and could adversely affect our operating margins. Identifying the root cause of quality issues, particularly those affecting reagents and third-party components, may be difficult, which increases the time needed to address quality issues as they arise, and increases the risk that similar problems could recur. Because our products are designed to be used to perform complex genomic analysis, we expect that our customers will have an increased sensitivity to such defects. If we do not meet applicable regulatory or quality standards, our products may be subject to recall, and, under certain circumstances, we may be required to notify applicable regulatory authorities about a recall. If our products are subject to recall or shipment holds, our reputation, business, financial condition, or results of operations could be adversely affected.

If we are unable to increase our manufacturing or service capacity and develop and maintain operation of our manufacturing or service capability, we may not be able to launch or support our products or services in a timely manner, or at all.

We expect to increase our manufacturing and service capacity to meet the anticipated demand for our products. Although we have consistently increased our manufacturing and service capacity, and we believe we have plans in place sufficient to ensure we have adequate capacity to meet our current business plans, there are uncertainties inherent in expanding our manufacturing and service capabilities, and we may not be able to sufficiently increase our capacity in a timely manner. For example, manufacturing and product quality issues may arise as we increase production rates at our manufacturing facilities and launch new products. Also, we may not manufacture the right product mix to meet customer demand, especially as we introduce new products. As a result, we may experience difficulties in meeting customer, collaborator, and internal demand, in which case we could lose customers or be required to delay new product introductions, and demand for our products could decline. Additionally, in the past, we have experienced variations in manufacturing conditions and quality control issues that have temporarily reduced or suspended production of certain products. Due to the intricate nature of manufacturing complex instruments, consumables, and products that contain DNA and enzymes, we may encounter similar or previously unknown manufacturing difficulties in the future that could significantly reduce production yields, impact our ability to launch or

sell these products (or to produce them economically), or prevent us from achieving expected performance levels, any of which could adversely affect our business, financial condition, or results of operations.

An interruption in our ability to manufacture our products or an inability to obtain key components or raw materials due to a catastrophic disaster, infectious disease, or infrastructure failure could adversely affect our business.

We currently manufacture in a limited number of locations. Our manufacturing facilities are located in San Diego and the San Francisco Bay Area in California; Madison, Wisconsin; Cambridge, United Kingdom; and Singapore. These areas are subject to natural disasters such as earthquakes, wildfires, or floods. If a natural disaster were to damage one of our facilities significantly or if other events, such as the outbreak of a serious infectious disease, were to cause our operations to fail or be significantly curtailed, we may be unable to manufacture our products, provide our services, or develop new products. In addition, if the capabilities of our suppliers and component manufacturers are limited or stopped, due to the outbreak of a serious infectious disease, natural or other disasters, quality, regulatory, or other reasons, it could negatively impact our ability to manufacture our products.

Many of our product manufacturing and distribution processes are automated and are controlled by information management systems, including significant network and storage infrastructure. If either our information management systems or our network or storage infrastructure were to fail for an extended period of time, our ability to manufacture our products on a timely basis could be adversely impacted and we could be prevented from achieving our expected shipments in any given period.

Risk Relating to COVID-19

We are unable to predict the extent to which the COVID-19 pandemic will adversely impact our business operations and financial performance.

The COVID-19 pandemic significantly curtailed the movement of people, goods and services worldwide, including in the regions in which we sell our products and services and conduct our business operations. How COVID-19 may impact business activity going forward cannot currently be estimated with any degree of certainty and may (1) negatively impact the demand for our products and services, (2) restrict our sales operations, marketing efforts, and customer field support, (3) impede the shipping and delivery of our products to customers (4) disrupt our supply chain, and (5) limit our ability to conduct research and product development and other important business activities. We continue to monitor our operations and applicable government mandates and recommendations, and we have made modifications to our operations because of the COVID-19 pandemic. In the U.S. and in most other key markets, most of our employees continue to work remotely, while ensuring essential staffing levels in our operations remain in place, including maintaining key personnel in our laboratories and manufacturing facilities, and many may continue to work remotely for an indefinite period of time. Remote working arrangements could impact employees' productivity and morale. We may incur increased costs and experience delays in sales, purchases, deliveries and other business activities associated with the invocation by customers, suppliers, service providers, and other business partners of contractual provisions they may claim are triggered by the COVID-19 pandemic. Additionally, concerns over the economic impact of the COVID-19 pandemic have caused volatility in financial and other capital markets which may adversely impact the fair value of our marketable securities.

Risk Relating to the Protection of Our Intellectual Property

Any inability to effectively protect our proprietary technologies could harm our competitive position.

The proprietary positions of companies developing tools for the life sciences, genomics, forensics, agricultural, and pharmaceutical industries, including our proprietary position, generally are uncertain and involve complex legal and factual questions. Our success depends to a large extent on our ability to develop proprietary products and technologies and to obtain patents and maintain adequate protection of our intellectual property in the United States and other countries. The laws of some foreign countries do not protect proprietary rights to the same extent as the laws of the United States, and many companies have encountered significant challenges in establishing and enforcing their proprietary rights outside of the United States. These challenges can be caused by the absence of rules and methods for the establishment and enforcement of intellectual property rights outside of the United States.

We will be able to protect our proprietary rights from unauthorized use by third parties only to the extent that our proprietary technologies are covered by valid and enforceable patents or are effectively maintained as trade secrets.

Any finding that our patents or applications are unenforceable could harm our ability to prevent others from practicing the related technology, and a finding that others have inventorship or ownership rights to our patents and applications could require us to obtain certain rights to practice related technologies, which may not be available on favorable terms, if at all. Furthermore, as issued patents expire, including those related to our sequencing-by-synthesis technology, we may lose some competitive advantage as others develop, market, and sell competing products, which could negatively affect our revenue.

In addition, our existing patents and any future patents we obtain may not be sufficiently broad to prevent others from practicing our technologies or from developing competing products and may therefore fail to provide us with any competitive advantage. We may need to initiate lawsuits to protect or enforce our patents, or litigate against third-party claims, which would be expensive, and, if we lose, may cause us to lose some of our intellectual property rights and reduce our ability to compete in the marketplace. Furthermore, these lawsuits may divert the attention of our management and technical personnel. There is also the risk that others may independently develop similar or alternative technologies or design around our patented technologies. In that regard, certain patent applications in the United States may be maintained in secrecy until the patents issue, and publication of discoveries in the scientific or patent literature tend to lag behind actual discoveries by several months.

We also rely upon trade secrets and proprietary know-how protection for our confidential and proprietary information, and we have taken security measures to protect this information. These measures, however, may not provide adequate protection for our trade secrets, know-how, or other confidential information.

Risks Related to Acquisitions, Including the Acquisition of GRAIL

Our acquisitions expose us to risks that could adversely affect our business, and we may not achieve the anticipated benefits of acquisitions of businesses or technologies.

As part of our strategy to develop and identify new products, services, and technologies, we have made, and may continue to make, acquisitions of technologies, products, or businesses. Acquisitions involve numerous risks and operational, financial, and managerial challenges, including the following, any of which could materially and adversely affect our business, financial condition, or results of operations:

- difficulties in integrating new operations, technologies, products, and personnel;
- lack of synergies or the inability to realize expected synergies and cost-savings;
- lengthy, expensive, and time and resource-intensive regulatory review processes, the outcomes of which can be unpredictable;
- difficulties in managing geographically dispersed operations;
- underperformance of any acquired technology, product, or business relative to our expectations and the price we paid;
- negative near-term impacts on financial results after an acquisition, including acquisition-related earnings charges;
- the potential loss of key employees, customers, and strategic partners of acquired companies;
- claims by terminated employees and shareholders of acquired companies or other third parties related to the transaction;
- the issuance of dilutive securities, assumption or incurrence of additional debt obligations or expenses, or use of substantial portions of our cash;
- diversion of management’s attention and company resources from existing operations of the business;
- inconsistencies in standards, controls, procedures, and policies;
- the impairment of intangible assets as a result of technological advancements, or worse-than-expected performance of acquired companies; and

- assumption of, or exposure to, known or unknown contingent liabilities or liabilities that are difficult to identify or accurately quantify.

In addition, the successful integration of acquired businesses requires significant efforts and expense across all operational areas, including sales and marketing, research and development, manufacturing, finance, legal, and information technologies. There can be no assurance that any of the acquisitions we make will be successful or will be, or will remain, profitable. Our failure to successfully address the above risks may prevent us from achieving the anticipated benefits from any acquisition in a reasonable time frame, or at all.

Our acquisition of GRAIL (the Acquisition) remains subject to ongoing legal and regulatory proceedings in the United States and in the European Union. Adverse decisions by the EU and/or U.S. courts, the European Commission, the U.S. Federal Trade Commission (the FTC) and/or other governmental or regulatory authorities and/or other adverse consequences resulting from our decision to proceed with the completion of the acquisition, could result in significant financial penalties, operational restrictions, increased costs or loss of revenues, implicate our existing contractual arrangements or require us to divest all or a portion of the assets or equity interests of GRAIL on terms that are materially worse than the terms on which we acquired GRAIL, any or all of which, individually or in the aggregate, could have a material adverse effect on our business, financial condition and results of operation.

As previously disclosed, on March 30, 2021, the FTC filed an administrative complaint alleging that our acquisition of GRAIL (the Acquisition) would violate Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18. We filed an answer to the FTC's complaint in the administrative court on April 13, 2021, and the administrative trial commenced on August 24, 2021. On September 1, 2022, the administrative law judge (the ALJ) ruled in favor of Illumina and found that the acquisition of GRAIL did not violate Section 7 of the Clayton Act. In the decision, the ALJ found that the FTC's complaint counsel had failed to prove its prima facie case that Illumina's acquisition of GRAIL would result in harm to competition in a putative market for multi-cancer early detection (MCED) tests. The FTC's complaint counsel appealed the ALJ's decision to the full FTC on September 2, 2022. The appeal was fully briefed as of November 10, 2022 and oral argument occurred on December 13, 2022. A decision from the full FTC is pending. We intend to continue to vigorously defend against the FTC action.

As previously disclosed, on April 19, 2021, the European Commission accepted a request for referral of the Acquisition (the Referral) for European Union merger review under Article 22(1) of Council Regulation (EC) No 139/2004 (the EU Merger Regulation), which had been submitted by a Member State of the European Union. The European Commission had previously notified us asserting that as a result of the Referral, pursuant to Article 22(4) of the EU Merger Regulation, we were prohibited from implementing the Acquisition (i) until the European Commission clears the Acquisition under the EU Merger Regulation or (ii) until the European Commission refuses the Referral, and therefore the European Commission's acceptance of the Referral continued the purported standstill on the completion of the Acquisition until such time as the European Commission completes its review and approves the Acquisition. On April 29, 2021, we filed an action in the General Court of the European Union (the EU General Court) asking for annulment of the European Commission's decision asserting jurisdiction to review the Acquisition under Article 22 of the EU Merger Regulation, as the Acquisition does not meet the jurisdictional criteria under the EU Merger Regulation or under the national merger control laws of any Member State of the European Union. On December 16, 2021, the EU General Court held a hearing regarding the European Commission's assertion of jurisdiction. On July 13, 2022, the EU General Court ruled that the European Commission has jurisdiction to review the Acquisition under the EU Merger Regulation. On September 22, 2022, we filed an appeal in the Court of Justice of the European Union asking for annulment of the EU General Court's decision.

As previously disclosed, on October 29, 2021, the European Commission adopted an order imposing interim measures (the Initial Interim Measures Order), which provided that (i) we ensure that Illumina and GRAIL will continue to operate as independent legal entities that transact at arms' length, no integration activity will take place, the day-to-day operation of GRAIL will remain the sole responsibility of GRAIL's management and our management will have no involvement in or influence over GRAIL, (ii) we take certain supportive measures to preserve GRAIL's viability, marketability and competitiveness, including with respect to the provision of resources to GRAIL and the retention and/or replacement of key personnel of GRAIL, (iii) subject to limited exceptions, we implement all necessary measures to ensure that Illumina does not obtain any confidential information relating to GRAIL during the hold separate period and vice versa and (iv) we appoint an independent firm as monitoring trustee to monitor our compliance with the Initial Interim Measures Order. An independent monitoring trustee has been appointed. As the Initial Interim Measures Order was set to expire on November 3, 2022, the European Commission adopted a new order imposing interim measures (the New Interim Measures Order) on October 28, 2022. The New Interim Measures Order renews, subject to certain operational modifications, Illumina's obligations under the Initial Interim Measures

Order (as described above), and also expressly prohibits Illumina from selling, transferring, encumbering or otherwise disposing of GRAIL or any of GRAIL's assets. Such hold separate arrangement, and our obligations pursuant thereto, have imposed implementation and administrative processes and additional costs, which have been burdensome to implement and administer, and which we expect to continue for the duration of the hold separate arrangement (pursuant to the New Interim Measures Order or any replacement thereof). Such burdens and additional costs, independently or together with additional burdens, costs and/or liabilities arising from such arrangement, may result in loss of revenue and other adverse effects on our business, financial condition and results of operations and have an adverse impact on our ability to achieve the anticipated benefits of the Acquisition. Further, our failure to comply with the terms of the New Interim Measures Order may result in the European Commission seeking to impose fines or other penalties on us. On December 1, 2021, we filed an action with the EU General Court asking for annulment of the Initial Interim Measures Order. The hearing of that application has been stayed pending our appeal of the judgment of the EU General Court regarding the European Commission's assertion of jurisdiction. On January 10, 2023, we filed an action with the EU General Court asking for annulment of the New Interim Measures Order.

On September 6, 2022, the European Commission announced that it had completed its Phase II review of the Acquisition and adopted a final decision (the Prohibition Decision), which found that, in its view, our acquisition of GRAIL was incompatible with the internal market in Europe because it results in a significant impediment to effective competition. On November 17, 2022, we filed an action with the EU General Court asking for annulment of the Prohibition Decision. On December 5, 2022, the European Commission issued a Statement of Objections informing Illumina of the order it intends to adopt requiring us (among other things) to divest GRAIL (the EC Divestment Decision). We filed a response to the Statement of Objections on January 16, 2023. Neither the Prohibition Decision nor such public statements indicate when any such EC Divestment Decision may be adopted. We intend to appeal any EC Divestment Decision (if and when adopted by the European Commission) and, if necessary, to seek interim relief suspending the divestment of GRAIL until the final determination of these appeals.

The Prohibition Decision and the EC Divestment Decision, and any order or decision by the FTC pursuant to which Illumina is required to divest GRAIL (an FTC Divestment Decision), if implemented once final and non-appealable or during the pendency of the applicable appeals proceedings, and our obligations pursuant thereto, will impose significant costs and additional liabilities on us, including significant advisory fees and additional expenses, and may result in loss of revenue and other adverse effects on our business, financial condition and results of operations. Such adverse effects could include being required to divest GRAIL on terms that are materially worse than the terms on which we acquired GRAIL. Furthermore, we may not be able to direct the timing, structure or financial terms of such divestment, which could result in negative financial or tax consequences. For example, we are unlikely to be able to, in a sale of GRAIL, effect such sale in a non-taxable transaction and so would incur significant tax liabilities attributable to the recognition of taxable gain equal to the difference between (i) the fair market value of any consideration received and (ii) our tax basis in GRAIL (which tax basis is currently estimated to be between $500 million and $1 billion). In addition, any such divestment will likely implicate certain provisions in our third-party contracts and other agreements, including our obligations with respect to contingent value rights (the CVRs) issued by us as part of the Acquisition, which may adversely affect us and our business and/or the market value of the CVRs or have other consequences. For example, we may be unable to fully discharge our obligations with respect to the CVRs in connection with any such divestiture, and/or such divestiture may result in a change in obligor on the CVRs. Moreover, the business of GRAIL may be adversely affected by any such divestment, which could adversely affect the market value of the CVRs. The Prohibition Decision and the implementation of the EC Divestment Decision or an FTC Divestment Decision could also divert management's attention and company resources away from existing operations and other opportunities that may have been beneficial to us, any or all of which, individually or in the aggregate, could have a material adverse effect on our business, financial condition and results of operation. We cannot predict what other adverse consequences to, among other things, our reputation, our relationships with governmental or regulatory authorities or our ability to successfully complete future transactions may result.

Additionally, on July 19, 2022, the European Commission issued a Statement of Objections alleging that we breached the EU Merger Regulation by completing the Acquisition. We believe that the European Commission will likely seek to impose a fine on us pursuant to Article 14(2)(b) of the EU Merger Regulation of up to 10% of our consolidated annual revenues (the Article 14(2)(b) Fine) in Q1 2023. In addition, the European Commission, the FTC and/or other governmental or regulatory authorities may seek to impose other fines, penalties, remedies or restrictions. We intend to vigorously defend against any such fines, penalties, remedies or restrictions, but we cannot predict the scope or severity thereof or the outcome of any related proceedings. We also cannot predict what other adverse consequences to, among other things, our reputation, our relationships with governmental or regulatory authorities or our ability to successfully complete future acquisitions and/or divestitures may result from our decision to proceed with the completion of the Acquisition. We expect to continue to hold the assets or equity interests of GRAIL separate until the applicable legal and regulatory proceedings are completed or, if required, a divestment of GRAIL is effected, and such inability to integrate may materially and adversely affect or prevent the synergies and other benefits we expect to achieve as a result of the Acquisition and could result in additional costs or liabilities, loss of revenue and other

adverse effects on our business, financial condition and results of operations. As of January 1, 2023, we accrued $458 million in anticipation of a potential Article 14(2)(b) Fine, included in accrued liabilities, representing 10% of our consolidated annual revenues for fiscal year 2022 in accordance with ASC 450, *Contingencies*. In addition, under applicable accounting rules, we may be required from time to time to perform interim analyses of the value of GRAIL. To the extent that the value of GRAIL on a standalone basis is less than its book value, we would be required to record an impairment on our consolidated financial statements.

We are subject to various uncertainties and restrictions while the Acquisition remains subject to ongoing regulatory and legal review and proceedings related thereto, including the New Interim Measures Order, that could adversely affect our business, financial condition and results of operations.

During the period in which the Acquisition remains subject to ongoing regulatory and legal review and proceedings related thereto, it is possible that customers, suppliers, commercial partners and/or other persons with whom we have a business relationship may elect to delay or defer certain business decisions or decide to seek to terminate, change or renegotiate their relationships with us because of the Acquisition or the various uncertainties related to the ongoing review of the Acquisition, other legal and regulatory proceedings, and/or the hold separate arrangement required by the European Commission's New Interim Measures Order, which could significantly reduce the expected benefits of the Acquisition and/or negatively affect our revenues, earnings and cash flows, and the market price of our common stock, regardless of the ultimate outcome of such review and proceedings. Uncertainty about the effects of the Acquisition (and about the related regulatory and judicial review process) on employees may impair our ability to attract, retain and motivate key personnel while the Acquisition remains subject to ongoing regulatory and legal review and proceedings, and for a period of time thereafter. If key employees depart because of these or other issues, we and GRAIL may have to incur additional and significant costs in identifying, hiring and retaining replacements for departing employees and may lose significant expertise and talent. Matters relating to the Acquisition (including the regulatory and legal review and proceedings related thereto and the hold separate arrangement required by the New Interim Measures Order) require substantial commitments of time and resources by Illumina management and personnel and will continue in the future, which otherwise would have been devoted to day-to-day operations and other opportunities that may have been beneficial to us. We will also incur significant costs related to the ongoing review and proceedings related to the Acquisition (including to comply with the hold separate obligations required by the New Interim Measures Order). These costs are substantial and include financial advisory, legal, monitoring trustee, and accounting costs.

We currently are prohibited from integrating GRAIL's business, and if such integration is ultimately permitted, we may not be able to integrate GRAIL's business successfully or manage the combined business effectively. Many of the anticipated synergies and other benefits of acquiring GRAIL may not be realized or may not be realized within the expected time frame.

We and GRAIL entered into the Merger Agreement with the expectation that the Acquisition would result in various benefits, including, among other things, operating efficiencies, synergies and cost savings. Achieving the anticipated benefits of the Acquisition is subject to a number of uncertainties, including whether our and GRAIL's businesses can be integrated in an efficient and effective manner. While we are subject to the New Interim Measures Order, we are not able to integrate or have any involvement in or influence over GRAIL's business and our interactions with GRAIL are subject to the review of the appointed monitoring trustee, which requires us to incur additional costs and burdens us and GRAIL with administrative inefficiencies. Such delay in integration and managerial prohibitions may materially and adversely affect the synergies and other benefits we expect to achieve as a result of the Acquisition, and there is no guarantee that we will be permitted to integrate GRAIL in a timely manner or at all.

If we are ultimately able to integrate GRAIL, it is possible that the integration process could take longer than anticipated or that the management of the combined business could be more difficult than expected, and could result in the loss of valuable employees, the disruption of ongoing businesses, processes, systems and business relationships, or inconsistencies in standards, controls, procedures, practices, policies and compensation arrangements, any of which could adversely affect our ability to achieve the anticipated benefits of the Acquisition. Our results of operations could also be adversely affected by any issues attributable to either company's operations that arise or are based on events or actions that occur before the closing of the Acquisition or during the pendency of the hold separate arrangements. The integration process is subject to a number of risks and uncertainties, and no assurance can be given that the anticipated benefits of the Acquisition will be realized or, if realized, the timing of their realization. Failure to achieve these anticipated benefits could adversely affect our and the surviving company's future businesses, financial condition, results of operations and prospects.

The market price of our common stock may decline as a result of the Acquisition and the final outcomes of the regulatory and judicial reviews thereof.

The market price of our common stock may decline as a result of the Acquisition and the final outcomes of the regulatory and judicial reviews thereof, and holders of our common stock could see a decrease in the value of their investment in our common stock, if, among other things, we are unable to achieve the expected growth in earnings, or if the anticipated benefits, including synergies, cost savings, innovation and operational efficiencies, from the Acquisition are not realized, or if the Acquisition and integration-related costs related to the Acquisition are greater than expected, or if, as a result of unfavorable outcomes of regulatory and judicial proceedings, we are subject to fines, penalties, restrictions or remedies, including divestiture remedies. The market price of our common stock may also decline if we do not achieve the anticipated benefits of the Acquisition as rapidly or to the extent expected by financial or industry analysts or if the effects of the Acquisition on our financial position, results of operations or cash flows are not otherwise consistent with the expectations of financial or industry analysts. In addition, some former GRAIL stockholders may decide not to continue to hold the shares of our common stock they receive as a result of the Acquisition, and any such sales of our common stock could have the effect of depressing their market price. Moreover, general fluctuations in stock markets could have a material adverse effect on the market for, or liquidity of, our common stock, regardless of our actual operating performance.

Risks Relating to Our Strategic Collaborations

If we fail to maintain and successfully manage our strategic collaborations, our future results may be adversely impacted.

Strategic collaborations require significant management attention and operational resources. If we are unable to successfully manage or meet milestones related to our strategic collaborations, or if our partners do not perform as we expect, our future results may be adversely impacted. Furthermore, dependence on collaborative arrangements may also subject us to other risks, including:

- we may be required to relinquish important rights, including intellectual property, marketing and distribution rights;
- we may disagree with our partners as to rights to intellectual property, the direction of research programs, or commercialization activities;
- our revenues may be lower than if we were to develop and commercialize such products ourselves;
- a collaboration partner could develop and market a product that is competitive with either products developed under the collaboration or other of our products, either independently or in collaboration with others, including our competitors;
- our partners could become unable or less willing to expend their resources in support of our collaboration;
- collaborations could expose us to additional regulatory risks; and
- we may be unsuccessful at managing multiple simultaneous collaborations.

Moreover, disagreements with a partner or former partner could develop, and any conflict with a partner or former partner could reduce our ability to enter into future collaboration agreements and negatively impact our relationships with one or more existing partners.

Risks Relating to Litigation

Litigation, other proceedings, or third-party claims of intellectual property infringement could require us to spend significant time and money and could prevent us from selling our products or services.

Our success depends in part on our non-infringement of the patents or proprietary rights of third parties. Third parties have asserted and may in the future assert that we are employing their proprietary technology without authorization. As we enter new markets or introduce new products, we expect that competitors will likely claim that our products infringe their intellectual property rights as part of a business strategy to impede our successful competition. In addition, third parties may have obtained and may in the future obtain patents allowing them to claim that the use of our technologies infringes these patents. We could incur substantial costs and divert the attention of our management and technical personnel in defending ourselves against any of these claims. Any adverse ruling or perception of an

adverse ruling in defending ourselves against these claims could have an adverse impact on our stock price, which may be disproportionate to the actual impact of the ruling itself. Furthermore, parties making claims against us may be able to obtain injunctive or other relief, which effectively could block our ability to develop further, commercialize, or sell products or services, and could result in the award of substantial damages against us. In the event of a successful infringement claim against us, we may be required to pay damages and obtain one or more licenses from third parties or be prohibited from selling certain products or services. In addition, we may be unable to obtain these licenses at a reasonable cost, if at all. We could therefore incur substantial costs related to royalty payments for licenses obtained from third parties, which could negatively affect our gross margins and earnings per share. In addition, we could encounter delays in product introductions while we attempt to develop alternative methods or products. Defense of any lawsuit or failure to obtain any of these licenses on favorable terms could prevent us from commercializing products, and the prohibition of sale of any of our products or services could adversely affect our ability to grow or maintain profitability.

If product or service liability lawsuits are successfully brought against us, we may face reduced demand for our products and incur significant liabilities.

Our products and services are used for sensitive applications, and we face an inherent risk of exposure to product or service liability claims if our products or services are alleged to have caused harm, resulted in false negatives or false positives, or do not perform in accordance with specifications. Product liability claims filed against us or against third parties to whom we may have an obligation could be costly and time-consuming to defend and result in substantial damages or reputational risk. We cannot be certain that we would be able to successfully defend any product or service liability lawsuit brought against us. Regardless of merit or eventual outcome, product or service liability claims may result in: decreased demand for our products; injury to our reputation; increased product liability insurance costs; costs of related litigation; and substantial monetary awards to plaintiffs.

Although we carry product and service liability insurance, if we become the subject of a successful product or service liability lawsuit, our insurance may not cover all substantial liabilities, which could have an adverse effect on our business, financial condition, or results of operations.

Risks Relating to Government Regulation

Our products, if used for the diagnosis of disease, could be subject to government regulation, and the regulatory approval and maintenance process for such products may be expensive, time-consuming, and uncertain both in timing and in outcome.

Our products are not subject to FDA clearance or approval if they are not intended to be used for the diagnosis, treatment or prevention of disease. However, as we expand our product line to encompass products that are intended to be used for the diagnosis of disease, such as our FDA-regulated MiSeqDx, certain of our products will become subject to regulation by the FDA, or comparable international agencies, including requirements for regulatory clearance or approval of such products before they can be marketed. Such regulatory approval processes or clearances may be expensive, time-consuming, and uncertain, and our failure to obtain or comply with such approvals and clearances could have an adverse effect on our business, financial condition, or operating results. In addition, changes to the current regulatory framework, including the imposition of additional or new regulations, could arise at any time during the development or marketing of our products, which may negatively affect our ability to obtain or maintain FDA or comparable regulatory approval of our products, if required.

Diagnostic products are regulated as medical devices by the FDA and comparable international agencies and may require either clearance from the FDA following the 510(k) pre-market notification process or pre-market approval from the FDA, in each case prior to marketing. Obtaining the requisite regulatory approvals can be expensive and may involve considerable delay. If we fail to obtain, or experience significant delays in obtaining, regulatory approvals for diagnostic products that we develop, we may not be able to launch or successfully commercialize such products in a timely manner, or at all.

In addition, if our products labeled as “For Research Use Only. Not for use in diagnostic procedures,” or RUO, are used, or could be used, for the diagnosis of disease, the regulatory requirements related to marketing, selling, and supporting such products could change or be uncertain, even if such use by our customers is without our consent. If the FDA or other regulatory authorities assert that any of our RUO products are subject to regulatory clearance or approval, our business, financial condition, or results of operations could be adversely affected.

If the FDA requires in the future that any of our LDT products be subject to regulatory clearance or approval, our business, financial condition, or results of operations could be adversely affected.

Certain of our diagnostic products are currently available through laboratories that are certified under the Clinical Laboratory Improvements Amendments (CLIA) of 1988. These products are commonly called “laboratory developed tests,” or LDTs. For a number of years, the FDA has exercised its regulatory enforcement discretion not to regulate LDTs as medical devices if created and used within a single laboratory. However, the FDA has been reconsidering its enforcement discretion policy and has commented that regulation of LDTs may be warranted because of the growth in the volume and complexity of testing services utilizing LDTs. We cannot predict the nature or extent of the FDA's final guidance or regulation of LDTs, in general, or with respect to our LDTs, in particular. If the FDA requires in the future that LDT products are subject to regulatory clearance or approval, our business, financial condition, or results of operations could be adversely affected.

Risks Relating to Information Technology Security and Continuity

Despite using commercially reasonable measures to secure our systems, networks, and products, security breaches, including with respect to cyber-security, and other disruptions could compromise our information, products, and services, disrupt our or our customers’ operations, and expose us to liability, which could cause our business and reputation to suffer.

In the ordinary course of our business, we collect sensitive data, including intellectual property, our proprietary business information (and that of our customers), and personally identifiable information of our customers and employees and store it in our data centers and on our networks. Our customers also collect sensitive data and information using our products. The secure maintenance of information is important to our operations and business strategy. Despite our security measures, our information technology infrastructure and our products may in the future be, and have in the past been, impacted by cyber-attacks, employee error, malfeasance, or other disruptions due to the inherent features of Internet and technical limitations.

We and users of our products may face cyber-attacks, including from nation state actors or advanced persistent threats who attempt to penetrate our or our customers’ network security, including our data centers; sabotage or otherwise disable our research, products, and services, including instruments at our customers’ sites; misappropriate our or our customers' and partners' proprietary information, which may include personally identifiable information; or cause interruptions of our or our customers’ internal operations, systems and services. Any such breach could compromise our or our customers’ networks and the information stored there could be accessed, publicly disclosed, lost, or exfiltrated. Any such access, disruption, disclosure, or other loss of information could result in an adverse impact on our or our customers’ business, legal claims or proceedings, liability under laws that protect the privacy of personal information, and damage to our reputation.

Disruption of critical information technology systems could have an adverse effect on our operations, business, customer relations, and financial condition.

Our success depends, in part, on the continued and uninterrupted performance of our IT systems, which are used extensively in virtually all aspects of our business. IT systems may be vulnerable to damage from a variety of sources, including telecommunications or network failures, power loss, natural disasters, human acts, terrorist attacks, computer viruses, computer denial-of-service attacks, unauthorized access to customer or employee data or company trade secrets, and other attempts to harm our systems. Certain of our systems are not redundant, and our disaster recovery planning is not sufficient for every eventuality. Despite any precautions we may take, such problems could result in, among other consequences, disruption of our operations, which could harm our reputation and financial results.

As we continuously adjust our workflow and business practices and add additional functionality to our enterprise software, problems could arise that we have not foreseen, including interruptions in service, loss of data, inaccurate data, or reduced functionality. Such problems could adversely impact our ability to run our business in a timely manner.

General Risk Factors

Doing business internationally, especially in emerging markets, creates operational risk for our business.

Conducting and launching operations on an international scale requires close coordination of activities across multiple jurisdictions and consumes significant management resources. If we fail to coordinate and manage these activities effectively, including the risks noted below, our business, financial condition, or results of operations could be adversely affected. We have sales offices located internationally throughout Europe, the Asia-Pacific region, and Brazil, as well as manufacturing and research facilities in Singapore and the United Kingdom. Shipments to customers outside the United States comprised 50%, 52%, and 49% of our total revenue in 2022, 2021, and 2020, respectively.

We are subject to the following risks and challenges associated with conducting business globally, particularly in emerging international markets, where we expect a growing proportion of our business to be located:

- longer payment cycles and difficulties in collecting accounts receivable outside of the United States;
- longer sales cycles due to the volume of transactions taking place through public tenders;
- challenges in staffing and managing foreign operations;
- tariffs and other trade barriers;
- lack of consistency, and unexpected changes, in legislative or regulatory requirements of foreign countries into which we sell our products;
- increased risk of governmental and regulatory scrutiny and investigations;
- the burden of complying with a wide variety of foreign laws, regulations, and legal standards;
- operating in locations with a higher incidence of corruption and fraudulent business practices;
- import and export requirements, tariffs, taxes, and other trade barriers;
- weak or no protection of intellectual property rights;
- possible enactment of laws regarding the management of and access to data and public networks and websites;
- potential negative impact of a global health crisis, such as the outbreak of a serious infectious disease, to our commercial or manufacturing operations, including the loss of productivity from our own workforce and consequences of any restrictions on the movement of people or materials;
- possible future limitations on foreign-owned businesses;
- significant taxes; and
- general geopolitical risks beyond our control, including political, social and economic instability, changes in diplomatic and trade relations, and security concerns in general.

Additionally, we must comply with complex foreign and U.S. laws and regulations, such as the U.S. Foreign Corrupt Practices Act, the U.K. Bribery Act, and other local laws prohibiting corrupt payments to governmental officials, anti-competition regulations and sanctions imposed by the U.S. Office of Foreign Assets Control and other similar laws and regulations. Violations of these laws and regulations could result in fines and penalties, criminal sanctions, restrictions on our business conduct and on our ability to offer our products in one or more countries, and could also materially affect our brand, our ability to attract and retain employees, our international operations, our business and our operating results. Although we have implemented policies and procedures designed to ensure compliance with these laws and regulations, there can be no assurance that our employees, contractors, or agents will not violate our policies.

As we continue to expand our business into multiple international markets, our success will depend, in large part, on our ability to anticipate and effectively manage these and other risks associated with our international operations. Any of these risks could harm our international operations and negatively impact our sales, adversely affecting our business, results of operations, financial condition and growth prospects.

The armed conflict between Russia and Ukraine, the international sanctions imposed on Russia, and the restrictions imposed on exports to Russia could negatively affect our business.

As a result of the armed conflict between Russia and Ukraine, doing business in the Ukraine may not be practicable. In addition, the U.S. and other countries have imposed sanctions on Russia, including its major financial institutions and certain other businesses and individuals, as well as restrictions on exports to Russia. These sanctions and export restrictions have increased in magnitude over time. Russia has responded in kind, and the continuation of the conflict may result in additional sanctions and export restrictions being enacted by the U.S. or other countries. The impact of these sanctions and export restrictions, along with the spillover effect of ongoing civil, political and economic disturbances on surrounding areas, has affected our ability to ship products into the region, and has reduced our sales. Further, sanctions or export restrictions may limit or prohibit our ability to collect or pay liabilities owed by or to certain Russian entities or to supply products and services, directly or indirectly, into Russia at all. Although we currently do not expect the conflict to have a material adverse effect on our financial results, the impact of these events on general economic conditions is currently unknown and could in the future have a negative effect on our results of operations, cash flows, financial condition or growth prospects.

We are exposed to risks associated with transactions denominated in foreign currency.

During 2022, more than half of our international sales were denominated in foreign currencies while the majority of our purchases of raw materials were denominated in U.S. dollars. Changes in the value of the relevant currencies may affect the cost of certain items required in our operations. Changes in currency exchange rates may also affect the relative prices at which we are able to sell products in the same market. Our revenues from international customers may be negatively impacted as increases in the U.S. dollar relative to our international customers local currency could make our products more expensive, impacting our ability to compete. Our costs of materials from international suppliers may increase if, in order to continue doing business with us, they raise their prices as the value of the U.S. dollar decreases relative to their local currency. Foreign policies and actions regarding currency valuation could result in actions by the United States and other countries to offset the effects of such fluctuations. Recent global financial conditions have led to a high level of volatility in foreign currency exchange rates and that level of volatility may continue, which could adversely affect our business, financial condition, or results of operations.

We are subject to risks related to taxation in multiple jurisdictions.

We are subject to income taxes in both the United States and numerous foreign jurisdictions. Significant judgments based on interpretations of existing tax laws or regulations are required in determining the provision for income taxes. Our effective income tax rate could be adversely affected by various factors, including, but not limited to, changes in the mix of earnings in tax jurisdictions with different statutory tax rates, changes in the valuation of deferred tax assets and liabilities, changes in existing tax policies, laws, regulations, or rates, changes in the level of non-deductible expenses (including share-based compensation), location of operations, changes in our future levels of research and development spending, mergers and acquisitions, or the result of examinations by various tax authorities. Although we believe our tax estimates are reasonable, if the U.S. Internal Revenue Service or other taxing authority disagrees with the positions taken on our tax returns, we could have additional tax liability, including interest and penalties. If material, payment of such additional amounts upon final adjudication of any disputes could have a material impact on our results of operations and financial position.

Our operating results may vary significantly from period to period, and we may not be able to sustain operating profitability.

Our revenue is subject to fluctuations due to the timing of sales of high-value products and services, the effects of new product launches and related promotions, the timing and availability of our customers' funding, the impact of seasonal spending patterns, the timing and size of research projects our customers perform, changes in overall spending levels in the life sciences industry, and other unpredictable factors that may affect customer ordering patterns. In particular, collaboration agreements and large-scale government funded projects such as population genomic projects are the result of lengthy and complex negotiations, and the timing of revenue recognition in connection with these agreements and projects may be subject to significant uncertainty because of the long-term nature of development and collaboration projects, as well as sample availability for population genomics projects.

Given the difficulty in predicting the timing and magnitude of sales for our products and services, we may experience quarter-to-quarter fluctuations in revenue resulting in the potential for a sequential decline in quarterly revenue. While we anticipate future growth, there is some uncertainty as to the timing of revenue on a quarterly basis. This is because a substantial portion of our quarterly revenue is typically recognized in the last month of a quarter and because the pattern for revenue generation during that month is normally not linear, with a concentration of orders in the final weeks of the quarter. In light of that, our manufacturing and shipping operations may experience increased pressure

and demand during the time period shortly before the end of a fiscal quarter; delays related to our manufacturing and shipping operations during this time period could delay the recognition of revenue.

From time to time, we receive large orders that have a significant effect on our operating results in the period in which the order is recognized as revenue. The timing of such orders is difficult to predict, and the timing of revenue recognition from such orders may affect period-to-period changes in net sales. As a result, our operating results could vary materially from quarter-to-quarter based on the receipt of such orders and their ultimate recognition as revenue.

Adverse economic or market conditions may harm our business.

Worsening economic conditions, including inflation, increasing interest rates, decreasing economic activity, volatility in equity and credit markets or other changes in the economic environment, may adversely affect our business, financial condition, or results of operations. For example, we depend on third-party manufacturers and suppliers for some of our products, or sub-assemblies, components, and materials used in our products, and the suppliers of these inputs may seek to raise prices in the current inflationary economic environment. If our costs increase and we are unable to successfully pass along those increased costs to our customers, our revenue and or operating profitability may be adversely affected. In addition, we have a variable-interest-rate credit facility (see note "5. Debt and Other Commitments"), under which we have no currently outstanding debt, and we may in the future raise additional debt or refinance existing debt. Our cost of borrowing in the future may be higher than it has been to date because interest rates have risen and may continue to increase. An increased cost of borrowing may adversely affect our financial condition and results of operations.

LEGAL PROCEEDINGS

See discussion of legal proceedings in note "8. Legal Proceedings" within the Consolidated Financial Statements section of this report, which is incorporated by reference herein.

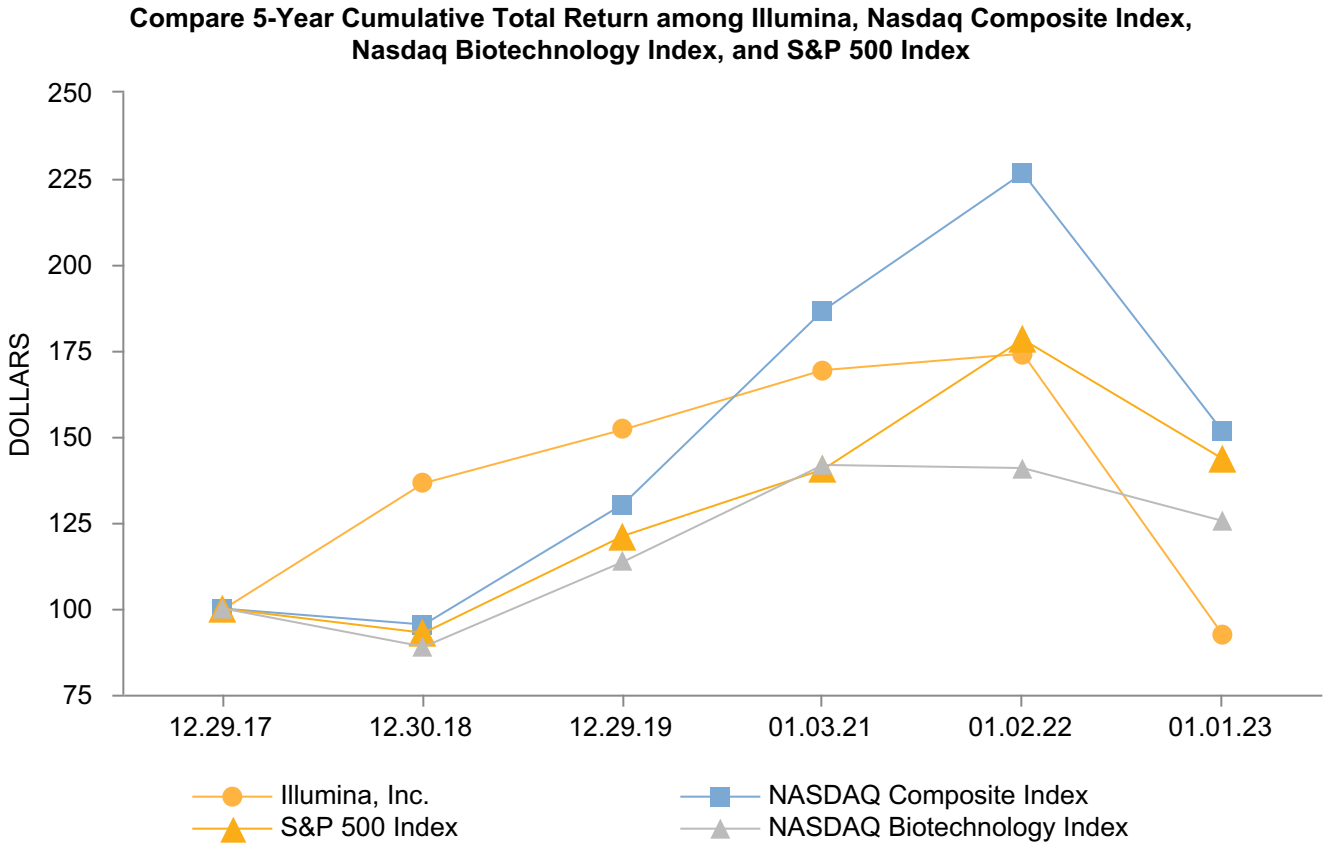
MARKET INFORMATION

Our common stock has been quoted on The Nasdaq Global Select Market under the symbol "ILMN" since July 28, 2000. The following table sets forth, for the fiscal periods indicated, the quarterly high and low sales prices per share of our common stock as reported on The Nasdaq Global Select Market.

	2022		2021	
	High	Low	High	Low
First Quarter	**$ 428.00**	**$ 302.79**	$ 555.77	$ 356.00
Second Quarter	**$ 371.16**	**$ 180.00**	$ 487.00	$ 368.07
Third Quarter	**$ 236.29**	**$ 173.45**	$ 526.00	$ 391.33
Fourth Quarter	**$ 248.87**	**$ 179.75**	$ 425.00	$ 341.03

Stock Performance Graph

The graph below compares the cumulative total stockholder returns on our common stock for the last five fiscal years with the cumulative total stockholder returns on the Nasdaq Composite Index, the Nasdaq Biotechnology Index, and the S&P 500 Index for the same period. The graph assumes that $100 was invested on December 29, 2017 in our common stock and in each index and that all dividends were reinvested. No cash dividends have been declared on our common stock. Stockholder returns over the indicated period should not be considered indicative of future stockholder returns.



Holders

As of February 10, 2023, we had 620 record holders of our common stock.

Dividends

We have never paid cash dividends and have no present intention to pay cash dividends in the foreseeable future. The indenture for our convertible senior notes due in 2023, which are convertible into cash and, in certain circumstances, shares of our common stock, requires us to increase the conversion rate applicable to the notes if we pay any cash dividends.

SHARE REPURCHASES AND SALES

Purchases of Equity Securities by the Issuer

There were no purchases of equity securities in 2022.

Sales of Unregistered Securities

There were no sales of unregistered securities in 2022.

MANAGEMENT'S DISCUSSION & ANALYSIS

Our Management's Discussion and Analysis (MD&A) will help readers understand our results of operations, financial condition, and cash flow. It is provided in addition to the accompanying consolidated financial statements and notes. This MD&A is organized as follows:

- *Management's Overview and Outlook.* High level discussion of our operating results and significant known trends that affect our business.
- *Results of Operations.* Detailed discussion of our revenues and expenses.
- *Liquidity and Capital Resources.* Discussion of key aspects of our consolidated statements of cash flows, changes in our financial position, and our financial commitments.
- *Critical Accounting Policies and Estimates.* Discussion of critical accounting policies and the significant assumptions, estimates, and judgments we make in applying such policies.
- *Quantitative and Qualitative Disclosure about Market Risk.* Discussion of our financial instruments' exposure to market risk.
- *Recent Accounting Pronouncements.* Summary of recent accounting pronouncements applicable to our consolidated financial statements.

This MD&A generally discusses 2022 and 2021 items and year-to-year comparisons between 2022 and 2021. Discussions of 2020 items and year-to-year comparisons between 2021 and 2020 that are not included in this Form 10-K can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Annual Report on Form 10-K for the fiscal year ended 2021.

This MD&A discussion contains forward-looking statements that involve risks and uncertainties. See "Consideration Regarding Forward-Looking Statements" preceding the Business & Market Overview section of this report for additional factors relating to such statements. See "Risk Factors" within the Business & Market Information section of this report for a discussion of certain risk factors applicable to our business, financial condition, and results of operations. Operating results are not necessarily indicative of results that may occur in future periods.

MANAGEMENT'S OVERVIEW AND OUTLOOK

This overview and outlook provide a high-level discussion of our operating results and significant known trends that affect our business. We believe that an understanding of these trends is important to understanding our financial results for the periods being reported herein as well as our future financial performance. This summary is not intended to be exhaustive, nor is it intended to be a substitute for the detailed discussion and analysis provided elsewhere in this report.

About Illumina

Our focus on innovation has established us as a global leader in DNA sequencing and array-based technologies, serving customers in the research, clinical and applied markets. Our products are used for applications in the life sciences, oncology, reproductive health, agriculture and other emerging segments.

Our customers include leading genomic research centers, academic institutions, government laboratories, and hospitals, as well as pharmaceutical, biotechnology, commercial molecular diagnostic laboratories, and consumer genomics companies.

Our comprehensive line of products addresses the scale of experimentation and breadth of functional analysis to advance disease research, drug development, and the development of molecular tests. This portfolio of leading-edge sequencing and array-based solutions addresses a range of genomic complexity and throughput, enabling researchers and clinical practitioners to select the best solution for their scientific challenge.

On August 18, 2021, we acquired GRAIL, a healthcare company focused on early detection of multiple cancers. GRAIL's Galleri blood test detects various types of cancers before they are symptomatic. We believe our acquisition of GRAIL will accelerate the adoption of next-generation sequencing based early multi-cancer detection tests, enhance our position in Clinical Genomics, and increase our directly accessible total addressable market. The acquisition is subject to ongoing legal proceedings, and, currently, GRAIL must be held and operated separately and independently from Illumina pursuant to interim measures ordered by the European Commission, which prohibited our acquisition of GRAIL on September 6, 2022. See note "4. Acquisitions, Goodwill and Intangible Assets" and note "8. Legal Proceedings" for further details. We have included the financial results of GRAIL in our consolidated financial statements from the date of acquisition.

We have two reportable segments, Core Illumina and GRAIL, as of January 1, 2023. Core Illumina relates to our core operations, excluding the results of GRAIL. See note "11. Segments and Geographic Data" for additional details.

Our financial results have been, and will continue to be, impacted by several significant trends, which are described below. While these trends are important to understanding and evaluating our financial results, this discussion should be read in conjunction with our consolidated financial statements and the notes thereto within the Consolidated Financial Statements section of this report, and the other transactions, events, and trends discussed in "Risk Factors" within the Business & Market Information section of this report.

Financial Overview

Since 2020, the COVID-19 pandemic and international efforts to control its spread have significantly curtailed the movement of people, goods, and services worldwide, including in the regions where we sell our products and services and conduct our business operations. In addition, armed conflict between Russia and Ukraine, which began in 2022, and the sanctions imposed by the U.S. and other countries, may impact our ability to ship products into affected regions and to designated customers. Furthermore, macroeconomic factors such as inflation, exchange rates and concerns about an economic downturn have impacted both Illumina directly and our customers' behavior. For example, some customers experienced supply chain pressures that delayed their lab expansions and others are managing inventory and capital more conservatively. We expect these factors to continue to impact our sales and results of operations in 2023, the size and duration of which is significantly uncertain.

Financial highlights for 2022 included the following:

- Revenue increased 1% in 2022 to $4.6 billion compared to $4.5 billion in 2021 primarily due to growth in sequencing consumables revenue and service and other revenue, partially offset by a decrease in sequencing instruments revenue. We expect our revenue to continue to increase in 2023. In September 2022, we announced the upcoming launch of the NovaSeq X Series, our latest high-throughput instrument that became available in Q1 2023.

- Gross profit as a percentage of revenue (gross margin) was 64.8% in 2022 compared to 69.7% in 2021. The decrease in gross margin was driven primarily by the gross loss incurred by GRAIL in 2022 and by less fixed cost leverage related to Core Illumina. Our gross margin depends on many factors, including: market conditions that may impact our pricing; sales mix changes among consumables, instruments, services, and development and licensing revenue; product mix changes between established products and new products; excess and obsolete inventories; royalties; our cost structure for manufacturing operations relative to volume; freight costs; and product support obligations.

- Loss from operations increased to $(4.2) billion in 2022 compared to $(123) million in 2021. The increase was primarily due to an impairment of $3.9 billion on goodwill related to GRAIL, a legal contingency of $458 million related to a potential fine we expect the European Commission to impose related to the closing of our acquisition of GRAIL, a loss of $145 million related to our settlement of litigation with BGI, and a decrease of $182 million in gross profit, partially offset by a decrease in selling, general and administrative expense of $795 million. We expect our operating expenses to continue to grow on an absolute basis in 2023.

- Our effective tax rate was (1.6)% and 13.8% in 2022 and 2021, respectively. In 2022, the variance from the U.S. federal statutory tax rate of 21% was primarily because of the tax impacts of the impairment of goodwill and the potential European Commission fine related to the GRAIL acquisition, both of which are nondeductible for tax purposes, the tax impact of capitalizing research and development expense for tax purposes, and the tax impact of GRAIL pre-acquisition net operating losses on GILTI and utilization of

U.S. foreign tax credits. This was partially offset by the mix of earnings in jurisdictions with lower statutory tax rates than the U.S. federal statutory tax rate, such as in Singapore and the United Kingdom.

Our future effective tax rate may vary from the U.S. federal statutory tax rate due to the mix of earnings in tax jurisdictions with different statutory tax rates and the other factors discussed in the risk factor “We are subject to risks related to taxation in multiple jurisdictions” in “Risk Factors” within the Business & Market Information section of this report. We anticipate that our future effective tax rate will be lower than the U.S. federal statutory tax rate of 21% due to the portion of our earnings that will be subject to lower statutory tax rates.

- We ended 2022 with cash, cash equivalents, and short-term investments totaling $2.0 billion, of which approximately $487 million was held by our foreign subsidiaries.

RESULTS OF OPERATIONS

To enhance comparability, the following table sets forth audited consolidated statement of operations data for 2022, 2021, and 2020, stated as a percentage of total revenue.[1]

	2022	2021	2020
Revenue:			
Product revenue	**86.2 %**	87.7 %	84.4 %
Service and other revenue	**13.8**	12.3	15.6
Total revenue	**100.0**	100.0	100.0
Cost of revenue:			
Cost of product revenue	**25.0**	23.4	24.3
Cost of service and other revenue	**6.4**	5.3	6.8
Amortization of acquired intangible assets	**3.8**	1.6	0.9
Total cost of revenue	**35.2**	30.3	32.0
Gross profit	**64.8**	69.7	68.0
Operating expense:			
Research and development	**28.8**	26.2	21.1
Selling, general and administrative	**28.3**	46.2	29.0
Legal contingency and settlement	**13.5**	—	—
Goodwill impairment	**85.4**	—	—
Total operating expense	**156.0**	72.4	50.1
(Loss) income from operations	**(91.2)**	(2.7)	17.9
Other income (expense):			
Interest income	**0.2**	—	1.3
Interest expense	**(0.6)**	(1.3)	(1.5)
Other (expense) income, net	**(3.0)**	23.5	8.7
Total other (expense) income, net	**(3.4)**	22.2	8.5
(Loss) income before income taxes	**(94.6)**	19.5	26.4
Provision for income taxes	**1.5**	2.7	6.1
Net (loss) income	**(96.1)%**	16.8 %	20.3 %

[1] Percentages may not reca cu ate due to round ng.

Revenue

Dollars in millions	2022	2021	2022-2021 Change	2022-2021 % Change
Core Illumina:				
Consumables	**$ 3,246**	$ 3,220	$ 26	1 %
Instruments	**729**	753	(24)	(3)
Total product revenue	**3,975**	3,973	2	—
Service and other revenue	**578**	546	32	6
Total Core Illumina revenue	**4,553**	4,519	34	1
GRAIL:				
Service and other revenue	**55**	12	43	358
Eliminations	**(24)**	(5)	(19)	380
Total consolidated revenue	**$ 4,584**	$ 4,526	$ 58	1 %

The increase in Core Illumina consumables revenue in 2022 was primarily due to an increase in sequencing consumables revenue of $26 million, driven primarily by growth in the instrument installed base, partially offset by the impact of challenging macroeconomic factors on our customers. Core Illumina instruments revenue decreased in 2022, primarily due to a decrease in sequencing instruments revenue of $26 million, which was driven by fewer shipments of our high-throughput instruments, as customers managed capital purchases more conservatively in response to the challenging macro environment and anticipated the availability of the NovaSeq X in 2023, partially offset by increased shipments of our mid-throughput instruments, driven by our NextSeq 1000/2000 instrument. Core Illumina service and other revenue increased in 2022, primarily due to increased revenue from extended maintenance service contracts and sequencing services, partially offset by revenue from a patent litigation settlement in 2021. Core Illumina revenue was adversely impacted by $84 million in 2022 due to unfavorable foreign exchange rate fluctuations, which is net of amounts reclassified to revenue of $53 million in 2022 related to our cash flow hedges.

GRAIL service and other revenue in 2022 and 2021, for the period subsequent to the acquisition, related primarily to sales of Galleri.

Gross Margin

Dollars in millions	2022	2021	2022-2021 Change	2022-2021 % Change
Gross profit (loss):				
Core Illumina	**$ 3,107**	$ 3,195	$ (88)	(3)%
GRAIL	**(117)**	(41)	(76)	185
Eliminations	**(18)**	—	(18)	100
Consolidated gross profit	**$ 2,972**	$ 3,154	$ (182)	(6)%
Gross margin:				
Core Illumina	**68.2 %**	70.7 %		
GRAIL	*	*		
Consolidated gross margin	**64.8 %**	69.7 %		

* Not mean ngfu .

The decrease in Core Illumina gross margin in 2022 was driven primarily by less fixed cost leverage on lower manufacturing volumes and higher freight costs, partially offset by favorable product mix. The decrease was also driven by increased revenue in 2021 from a patent litigation settlement.

GRAIL gross loss, in 2022 and 2021, for the period subsequent to the acquisition, was primarily due to amortization of intangible assets of $134 million and $45 million, respectively.

Operating Expense

Dollars in millions	2022	2021	2022-2021 Change	% Change
Research and development:				
Core Illumina	**$ 1,004**	$ 885	$ 119	13 %
GRAIL	**330**	300	30	10
Eliminations	**(13)**	—	(13)	100
Consolidated research and development	**1,321**	1,185	136	11
Selling, general and administrative:				
Core Illumina	**1,003**	1,502	(499)	(33)
GRAIL	**296**	590	(294)	(50)
Eliminations	**(2)**	—	(2)	100
Consolidated selling, general and administrative	**1,297**	2,092	(795)	(38)
Legal contingency and settlement:				
Core Illumina	**619**	—	619	100
Goodwill impairment:				
GRAIL	**3,914**	—	3,914	100
Total consolidated operating expense	**$ 7,151**	$ 3,277	$ 3,874	118 %

Core Illumina R&D expense increased by $119 million, or 13%, primarily due to increases in headcount, as we continue to invest in the research and development of new products and enhancements to existing products, and restructuring charges of $6 million, which consisted primarily of employee severance costs, recorded in Q4 2022, partially offset by a decrease in licensing fees related to co-development agreements and performance-based compensation.

GRAIL R&D expense for 2022 consisted primarily of expenses related to headcount, including performance-based compensation, and clinical trials. GRAIL R&D expense for 2021, for the period subsequent to the acquisition, consisted primarily of $167 million of share-based compensation expense related to the acceleration of outstanding equity awards as part of the acquisition, as well as other compensation costs related to the acquisition, and expenses related to headcount and clinical trials.

Core Illumina SG&A expense decreased by $499 million, or 33%, primarily due to the decrease in fair value of our contingent consideration liabilities of $205 million, primarily related to our GRAIL acquisition, a decrease in expenses related to our acquisition of GRAIL, which included $245 million in Continuation Payments made to GRAIL in 2021, and a decrease in performance-based compensation, partially offset by an increase in headcount, and restructuring charges of $24 million recorded in Q4 2022, which consisted primarily of employee severance costs and a lease impairment charge.

GRAIL SG&A expense for 2022 consisted primarily of expenses related to headcount, including performance-based compensation, and professional services. GRAIL SG&A expense for 2021, for the period subsequent to the acquisition, consisted primarily of $448 million of share-based compensation expense related to the acceleration of outstanding equity awards as part of the acquisition, as well as other compensation and transaction costs related to the acquisition, and expenses related to headcount.

Core Illumina legal contingency and settlement primarily consisted of an accrual of $458 million for the potential fine that the European Commission may impose of up to 10% of our consolidated annual revenues and a net loss of $145 million related to the settlement of our litigation with BGI. See note “8. Legal Proceedings” for additional details.

GRAIL goodwill impairment consisted of a goodwill impairment charge of $3,914 million as a result of performing an interim impairment test in Q3 2022 due to the identification of certain triggering events. See note “4. Acquisitions, Goodwill, and Intangible Assets” for additional details.

Other Income (Expense)

Dollars in millions	2022	2021	2022-2021 Change	2022-2021 % Change
Interest income	**$ 11**	$ —	$ 11	100 %
Interest expense	**(26)**	(61)	35	(57)
Other (expense) income, net	**(142)**	1,068	(1,210)	(113)
Total other (expense) income, net	**$ (157)**	$ 1,007	$ (1,164)	(116)%

Total other (expense) income, net primarily relates to Core Illumina for all periods presented.

Interest income consisted primarily of interest on our money market funds, which benefited from higher yields in 2022 due to rising interest rates. Interest expense consisted primarily of accrued interest on our Term Notes. The decrease in 2022 primarily relates to the accretion of the original debt discount on our convertible senior notes prior to the adoption of ASU 2020-06. The decrease in 2022 was also due to the recognition of interest expense in 2021 associated with the amortization of debt issuance costs related to the termination of our Bridge Facility. The decrease in other (expense) income, net was primarily due to gains recorded in 2021, including a gain of $899 million from our previously held investment in GRAIL, recorded as part of the acquisition, a gain of $86 million related to the exchange of certain GRAIL contingent value rights, and a $26 million gain on our derivative assets related to the terminated PacBio acquisition. The decrease is also attributable to a net loss on our strategic investments of $122 million in 2022 compared to a net gain of $18 million in 2021, and an unrealized loss of $7 million on our Helix contingent value right in 2022 compared to an unrealized gain of $30 million in 2021.

Provision for Income Taxes

Dollars in millions	2022	2021	2022-2021 Change	2022-2021 % Change
(Loss) income before income taxes	**$ (4,336)**	$ 884	$ (5,220)	(590)%
Provision for income taxes	**68**	122	(54)	(44)
Net (loss) income	**$ (4,404)**	$ 762	$ (5,166)	(678)%
Effective tax rate	**(1.6)%**	13.8 %		

In 2022, the variance from the U.S. federal statutory tax rate of 21% was primarily because of the $822 million tax impact from the impairment of goodwill and the $96 million tax impact from the potential European Commission fine related to the GRAIL acquisition, both of which are nondeductible for tax purposes, the $87 million tax impact of capitalizing research and development expense for tax purposes beginning in 2022, in accordance with the 2017 Tax Cuts and Jobs Act, and the $60 million tax impact of GRAIL pre-acquisition net operating losses on GILTI and the utilization of the U.S. foreign tax credits. The tax expense in 2022 was also favorably impacted by the mix of earnings in jurisdictions with lower statutory tax rates than the U.S. federal statutory tax rate, such as in Singapore and the United Kingdom. In 2021, the variance from the U.S. federal statutory tax rate of 21% was primarily attributable to the mix of earnings in jurisdictions with lower statutory tax rates than the U.S. federal statutory tax rate, such as in Singapore and the United Kingdom.

LIQUIDITY AND CAPITAL RESOURCES

At January 1, 2023, we had approximately $2.0 billion in cash and cash equivalents, of which approximately $487 million was held by our foreign subsidiaries. Cash and cash equivalents increased by $779 million from the prior year due to the factors described in the “Cash Flow Summary” below. Our primary source of liquidity, other than our holdings of cash, cash equivalents, and investments, has been cash flows from operations and, from time to time, issuances of debt. Our ability to generate cash from operations provides us with the financial flexibility we need to meet operating, investing, and financing needs. Historically, we have liquidated our short-term investments and/or issued debt to finance our business needs as a supplement to cash provided by operating activities. As of January 1, 2023, we had $26 million remaining in short-term investments comprised of marketable equity securities.

As of January 1, 2023, the fair value of our contingent consideration liability related to our acquisition of GRAIL was $412 million, of which $411 million was included in other long-term liabilities. The contingent value rights issued as part of the acquisition entitle the holders to receive future cash payments on a quarterly basis (Covered Revenue Payments) representing a pro rata portion of certain GRAIL-related revenues (Covered Revenues) each year for a 12-

year period. This will reflect a 2.5% payment right to the first $1 billion of revenue each year for 12 years. Revenue above $1 billion each year will be subject to a 9% contingent payment right during this same period. We expect Covered Revenues for Q4 2022 to be approximately $23 million and for related Covered Revenue Payments to total approximately $217,000 in Q1 2023. In Q4 2022, we paid $99,000 in Covered Revenue Payments related to Covered Revenues for Q3 2022 of $10 million.

We grant cash incentive equity awards to GRAIL employees that generally have terms of four years and vest in equal annual installments. As of January 1, 2023, the aggregate cash value of awards outstanding and unvested was $293 million, and we accrued an estimated liability of $36 million, included in accrued liabilities. In addition, we have an outstanding performance-based award for which vesting is based on GRAIL's future revenues. The award has an aggregate potential value of up to $78 million, which is expected to be settled in cash, and expires, to the extent unvested, in August 2030. As of January 1, 2023, it was not probable that the performance conditions associated with the award will be achieved.

As a result of our decision to proceed with the completion of our acquisition of GRAIL during the pendency of the European Commission's review, the European Commission will likely seek to impose a fine on us. As of January 1, 2023, we accrued $458 million, included in accrued liabilities, representing 10% of our consolidated annual revenues for fiscal year 2022, as further disclosed in note "8. Legal Proceedings."

On December 13, 2022, we issued term notes due 2025 with an aggregate principal amount of $500 million and term notes due 2027 with an aggregate principal amount of $500 million. The net proceeds from the issuance were $991 million. The 2025 Term Notes and the 2027 Term Notes accrue interest at a rate of 5.800% and 5.750% per annum, respectively, payable semi-annually in June and December of each year. The 2025 Term Notes mature on December 12, 2025 and the 2027 Term Notes mature on December 13, 2027.

On March 23, 2021, we issued term notes due 2023 with an aggregate principal amount of $500 million and term notes due 2031 with an aggregate principal amount of $500 million. The net proceeds from the issuance were $992 million. The 2023 Term Notes and the 2031 Term Notes accrue interest at a rate of 0.550% and 2.550% per annum, respectively, payable semi-annually in March and September of each year. The 2023 Term Notes, which are classified as short-term, mature on March 23, 2023 and the 2031 Term Notes mature on March 23, 2031.

We may redeem for cash all or any portion of the Term Notes, at our option, at any time prior to maturity.

Our convertible senior notes, with an aggregate principal amount of $750 million, which are due on August 15, 2023 and are classified as short-term, were not convertible as of January 1, 2023. The holders may convert their notes on or after May 15, 2023 until August 11, 2023.

On January 4, 2023, we entered into a new credit agreement which provides us with a $750 million senior unsecured five-year revolving credit facility, including a $40 million sublimit for swingline borrowings and a $50 million sublimit for letters of credit (the New Credit Facility). The New Credit Facility matures, and all amounts outstanding thereunder become due and payable in full, on January 4, 2028, subject to two one-year extensions at our option, the consent of the extending lenders, and certain other conditions. Concurrently, we terminated our credit agreement dated as of March 8, 2021 and the commitments thereunder, under which we had no outstanding borrowings.

We had $11 million and up to $88 million, respectively, remaining in our capital commitments to two venture capital investment funds as of January 1, 2023, that are callable through April 2026 and July 2029, respectively.

The impact of the 2017 Tax Cuts and Jobs Act resulted in a one-time transition tax on earnings of certain foreign subsidiaries which we elected to pay in installments. As of January 1, 2023, we owed $74 million, which we expect to pay over the next three years.

Authorizations to repurchase $15 million of our common stock remained available as of January 1, 2023 under the $750 million share repurchase program authorized by our Board of Directors on February 5, 2020. The repurchases may be completed under a 10b5-1 plan or at management's discretion. We do not intend to make any share repurchases during fiscal year 2023.

Our other short-term and long-term material cash requirements, from known contractual obligations as of January 1, 2023, include operating lease liabilities, uncertain tax positions, and amounts due under our executive deferred compensation plan, as discussed in the Consolidated Financial Statements section of this report.

We anticipate that our current cash, cash equivalents, and short-term investments, together with cash provided by operating activities and available borrowing capacity under the Credit Facility, are sufficient to fund our near-term capital and operating needs for at least the next 12 months. Operating needs include the planned costs to operate our business, including amounts required to fund working capital and capital expenditures. Our primary short-term needs for capital, which are subject to change, include:

- support of commercialization efforts related to our current and future products;
- acquisitions of equipment and other fixed assets for use in our current and future manufacturing and research and development facilities;
- the continued advancement of research and development efforts;
- potential strategic acquisitions and investments;
- repayment of debt obligations; and
- the expansion needs of our facilities, including costs of leasing and building out additional facilities.

We expect that our revenue and the resulting operating income, as well as the status of each of our new product development programs, will significantly impact our cash management decisions.

Our future capital requirements and the adequacy of our available funds will depend on many factors, including:

- our ability to successfully commercialize and further develop our technologies and create innovative products in our markets;
- scientific progress in our research and development programs and the magnitude of those programs;
- competing technological and market developments; and
- the need to enter into collaborations with other companies or acquire other companies or technologies to enhance or complement our product and service offerings.

Cash Flow Summary

In millions	2022	2021	2020
Net cash provided by operating activities	**$ 392**	$ 545	$ 1,080
Net cash used in investing activities	**(591)**	(1,069)	(554)
Net cash provided by (used in) financing activities	**1,000**	(51)	(766)
Effect of exchange rate changes on cash and cash equivalents	**(22)**	(3)	8
Net increase (decrease) in cash and cash equivalents	**$ 779**	$ (578)	$ (232)

Operating Activities

Net cash provided by operating activities in 2022 primarily consisted of net adjustments of $4,592 million and net changes in operating assets and liabilities of $204 million, less net loss of $4,404 million. The primary non-cash adjustments to net loss included goodwill impairment of $3,914 million, depreciation and amortization expenses of $394 million, share-based compensation of $366 million, and net losses on strategic investments of $122 million, partially offset by a gain recorded on our contingent consideration liabilities of $205 million and deferred income taxes of $23 million. Cash flow impact from changes in net operating assets and liabilities were primarily driven by an increase in accrued liabilities, partially offset by an increase in inventory and a decrease in accounts payable.

Net cash provided by operating activities in 2021 primarily consisted of net income of $762 million less net adjustments of $65 million and net changes in operating assets and liabilities of $152 million. The primary non-cash adjustments to net income included a gain on our previously held investment in GRAIL of $899 million, a gain on the exchange of GRAIL contingent value rights of $86 million, deferred income taxes of $76 million, a gain on our Helix contingent value right of $30 million, a gain on derivative assets related to a terminated acquisition of $26 million, and net gains on strategic investments of $18 million, partially offset by share-based compensation of $754 million, depreciation and amortization expenses of $251 million, and accretion of debt discount on our convertible senior notes of $32 million. Cash flow impact from changes in net operating assets and liabilities were primarily driven by

increases in accounts receivable, prepaid expenses and other current assets, inventory, and other assets, partially offset by increases in accrued liabilities and accounts payable.

Investing Activities

Net cash used in investing activities totaled $591 million in 2022. We invested $286 million in capital expenditures, primarily associated with our investment in facilities, paid $180 million for an intangible asset related to our settlement with BGI, paid $85 million, net of cash acquired, for an acquisition, and used $40 million for purchases of strategic investments.

Net cash used in investing activities totaled $1,069 million in 2021. We paid $2,444 million, net of cash acquired, for acquisitions, invested $208 million in capital expenditures, primarily associated with our investment in facilities, and purchased $77 million of available-for-sale debt securities and $52 million of strategic investments. We received $1,362 million related to maturities and sales of our available-for-sale debt securities, $298 million related to sales of our strategic investments and $52 million from PacBio for repayment of Continuation Advances.

Financing Activities

Net cash provided by financing activities totaled $1,000 million in 2022. We received $991 million in net proceeds from the issuance of debt and $63 million in proceeds from the sale of shares under our employee stock purchase plan and the issuance of common stock through the exercise of stock options, partially offset by $54 million used to pay taxes related to net share settlement of equity awards.

Net cash used in financing activities totaled $51 million in 2021. We made payments on our convertible senior notes due in 2021 of $517 million and used $511 million to pay taxes related to net share settlement of equity awards, of which $419 million was for taxes paid for the common stock issued related to the GRAIL acquisition. In addition, we paid $71 million related to our contingent consideration liabilities, of which $57 million related to the exchange of GRAIL contingent value rights. We received $988 million in net proceeds from the issuance of debt and $60 million in proceeds from the sale of shares under our employee stock purchase plan and the issuance of common stock through the exercise of stock options.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

The preparation of financial statements in accordance with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported in our consolidated financial statements and accompanying notes. Management bases its estimates on historical experience, market and other conditions, and various other assumptions it believes to be reasonable. Although these estimates are based on management's best knowledge of current events and actions that may impact us in the future, the estimation process is, by its nature, uncertain given that estimates depend on events over which we may not have control. Though the COVID-19 pandemic, the armed conflict between Russia and Ukraine, and macroeconomic factors such as inflation, exchange rates and concerns about an economic downturn present additional uncertainty, we continue to use the best information available to inform our critical accounting estimates. If market and other conditions change from those that we anticipate, our consolidated financial statements may be materially affected. In addition, if our assumptions change, we may need to revise our estimates, or take other corrective actions, either of which may also have a material effect on our consolidated financial statements.

We believe that the following critical accounting policies and estimates have a higher degree of inherent uncertainty and require our most significant judgments. In addition, had we used estimates different from any of these, our consolidated financial statements could have been materially different from those presented. Members of our senior management have discussed the development and selection of our critical accounting policies and estimates, and our disclosure regarding them, with the audit committee of our board of directors. Our accounting policies are more fully described in note "1. Organization and Significant Accounting Policies" in the Consolidated Financial Statements section of this report.

Revenue Recognition

Our revenue is generated primarily from the sale of products and services. Product revenue primarily consists of sales of instruments and consumables used in genetic analysis. Service and other revenue primarily consists of revenue generated from genotyping and sequencing services, instrument service contracts, development and licensing agreements, and cancer detection testing services related to the GRAIL business.

We recognize revenue when control of our products and services is transferred to our customers in an amount that reflects the consideration we expect to receive from our customers in exchange for those products and services. This process involves identifying the contract with a customer, determining the performance obligations in the contract, determining the contract price, allocating the contract price to the distinct performance obligations in the contract, and recognizing revenue when the performance obligations have been satisfied. Revenue recognition for contracts with multiple deliverables is based on the separate satisfaction of each distinct performance obligation within the contract. A performance obligation is considered distinct from other obligations in a contract when it provides a benefit to the customer either on its own or together with other resources that are readily available to the customer and is separately identified in the contract. We consider a performance obligation satisfied once we have transferred control of a good or service to the customer, meaning the customer has the ability to use and obtain the benefit of the good or service. The contract price is allocated to each performance obligation in proportion to its standalone selling price. We determine our best estimate of standalone selling price using average selling prices over a rolling 12-month period coupled with an assessment of current market conditions. If the product or service has no history of sales or if the sales volume is not sufficient, we rely upon prices set by management, adjusted for applicable discounts.

Revenue from product sales is recognized generally upon delivery to the end customer, which is when control of the product is deemed to be transferred. Invoicing typically occurs upon shipment and payment is typically due within 30 days from invoice. In instances where right of payment or transfer of title is contingent upon the customer's acceptance of the product, revenue is deferred until all acceptance criteria have been met. Revenue from genotyping and sequencing services, including cancer detection testing services related to the GRAIL business, is recognized when earned, which is generally at the time the genotyping or sequencing analysis data is made available to the customer. Revenue from instrument service contracts is recognized as the services are rendered, typically evenly over the contract term. Revenue from development and licensing agreements generally includes upfront and periodic licensing fees, contract research and development services, or payments for development and regulatory milestones. Revenue for these agreements is recognized when each distinct performance obligation is satisfied.

Revenue is recorded net of discounts, distributor commissions, and sales taxes collected on behalf of governmental authorities. Employee sales commissions are recorded as selling, general and administrative expense when incurred as the amortization period for such costs, if capitalized, would have been one year or less.

In certain markets, products and services are sold to customers through distributors. In most sales through distributors, the product is delivered directly to customers by us. The terms of sales transactions through distributors are consistent with the terms of direct sales to customers.

Inventory Valuation

Inventory is stated at the lower of cost or net realizable value. We regularly review inventory for excess and obsolete products and components, taking into account product life cycles, quality issues, historical experience, and usage forecasts. We record write-downs of inventory for potentially excess, obsolete, or impaired goods in order to state inventory at net realizable value. We make assumptions about future demand, market conditions, and the release of new products that may supersede old ones. However, if actual market conditions are less favorable than anticipated, additional inventory write-downs could be required.

Contingencies

We are involved in various lawsuits and claims arising in the ordinary course of business, including actions with respect to intellectual property, employment, and contractual matters. In connection with these matters, we assess, on a regular basis, the probability and range of possible loss based on the developments in these matters. A liability is recorded in the consolidated financial statements if it is believed to be probable that a loss has been incurred and the amount of the loss can be reasonably estimated. Because litigation is inherently unpredictable and unfavorable resolutions could occur, assessing contingencies is highly subjective and requires judgments about future events. We regularly review outstanding legal matters to determine the adequacy of the liabilities accrued and related disclosures in consideration of many factors, which include, but are not limited to, past history, scientific and other evidence, and the specifics and status of each matter. We may change our estimates if our assessment of the various factors changes and the amount of ultimate loss may differ from our estimates, resulting in a material effect on our business, financial condition, results of operations, and/or cash flows.

Business Combinations

Under the acquisition method of accounting, we allocate the fair value of the total consideration transferred to the tangible and identifiable intangible assets acquired and liabilities assumed based on their estimated fair values on the date of acquisition. The fair values assigned, defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between willing market participants, are based on estimates and assumptions determined by management. These valuations require us to make estimates and assumptions, especially with respect to intangible assets. We record the excess consideration over the aggregate fair value of tangible and intangible assets, net of liabilities assumed, as goodwill. Costs that we incur to complete the business combination, such as legal and other professional fees, are expensed as they are incurred.

In connection with certain acquisitions, contingent consideration can be earned by the sellers upon completion of certain future performance milestones. In these cases, a liability is recorded on the acquisition date, as a component of accrued liabilities and/or other long-term liabilities, for an estimate of the acquisition-date fair value of the contingent consideration. We generally use a Monte Carlo simulation or an income approach to estimate the fair value of contingent consideration. Estimates and assumptions used in a Monte Carlo simulation include forecasted revenues, a revenue risk premium, a revenue volatility estimate, an operational leverage ratio and a counterparty credit spread. An income approach utilizes inputs such as anticipated future cash flows, risk-free adjusted discount rates, and nonperformance risk, as well as management judgment regarding the probability of achieving certain future milestones. Future changes in our estimates could result in expenses or gains. Changes in the fair value of contingent consideration subsequent to the acquisition date are recognized in selling, general and administrative expense in our consolidated statements of operations.

We typically use the discounted cash flow method to value our acquired intangible assets. This method requires management judgment to forecast future operating results and establish residual growth rates and discount factors. The estimates we use to value and amortize intangible assets are consistent with the plans and estimates that we use to manage our business and are based on available historical information and industry estimates and averages. If the subsequent actual results and updated projections of the underlying business activity change compared with the assumptions and projections used to develop these values, we could experience impairment charges. In addition, we have estimated the economic lives of certain acquired assets and these lives are used to calculate depreciation and amortization expense. If our estimates of the economic lives change, depreciation or amortization expense could be accelerated or extended. We capitalize in-process research and development (IPR&D), which is considered indefinite lived until the completion or abandonment of the associated research and development efforts. Upon reaching the end of the relevant research and development project (i.e., upon commercialization), the IPR&D asset is amortized over its estimated useful life. If the relevant research and development project is abandoned, the IPR&D asset is expensed in the period of abandonment.

If the initial accounting for a business combination is incomplete by the end of a reporting period that falls within the measurement period (not to exceed a year from the date of acquisition), we report provisional amounts in our financial statements. During the measurement period, we adjust the provisional amounts recognized at the acquisition date to reflect new information obtained about facts and circumstances that existed as of the acquisition date that, if known, would have affected the measurement of the amounts recognized as of that date. We record these adjustments to the provisional amounts with a corresponding offset to goodwill. Any adjustments identified after the measurement period are recorded in the consolidated statements of operations.

Goodwill and Intangible Assets with Indefinite Lives — Impairment Assessment

Goodwill and other intangible assets with indefinite useful lives (i.e., IPR&D) are not amortized, however they are tested annually for impairment, in the second quarter of our fiscal year, and whenever events or changes in circumstances indicate that it is more likely than not that the fair value is less than the carrying value. Events that would indicate impairment and trigger an interim impairment test include, but are not limited to, current economic and market conditions, including a decline in market capitalization, a significant adverse change in legal factors, business climate or operational performance of the business, and an adverse action or assessment by a regulator.

We perform our goodwill impairment analysis at the reporting unit level, which aligns with our reporting structure and availability of discrete financial information. During the goodwill impairment review, we assess qualitative factors to determine whether it is more likely than not that the fair values of our reporting units are less than the carrying amounts, including goodwill. The qualitative factors include, but are not limited to, macroeconomic conditions, industry and market considerations, and our overall financial performance. If, after assessing the totality of these qualitative factors, we determine that it is not more likely than not that the fair values of our reporting units are less than the carrying amounts, then no additional assessment is deemed necessary. Otherwise, we proceed to compare the estimated fair values of the reporting units with the carrying values, including goodwill. If the carrying amounts of the

reporting units exceed the fair values, we record an impairment loss based on the difference. If a quantitative assessment is performed, the evaluation includes management estimates of cash flow projections based on internal future projections and/or use of a market approach by looking at market values of comparable companies. Key assumptions include, but are not limited to, future revenue growth, operating margins, capital expenditures, terminal growth rates and discount rates. We also consider our market capitalization as a part of our analysis. We may elect to bypass the qualitative assessment in a period and proceed to perform the quantitative goodwill impairment test.

Intangible Assets and Other Long-Lived Assets — Impairment Assessment

We perform regular reviews to determine if any event has occurred that may indicate that the carrying values of our intangible assets with finite lives and other long-lived assets are impaired. If indicators of impairment exist, we assess the recoverability of the affected assets by determining whether their carrying amounts exceed their undiscounted expected future cash flows. If the affected assets are not recoverable, we estimate the fair value of the assets and record an impairment loss if the carrying value exceeds the fair value. Factors that may indicate potential impairment include a significant decline in our stock price and market capitalization compared to net book value, significant changes in the ability of an asset to generate positive cash flows and the pattern of utilization of a particular asset.

In order to estimate the fair values of identifiable intangible assets with finite lives and other long-lived assets, we estimate the present value of future cash flows from those assets. The key assumptions that we use in our cash flow model are the amount and timing of estimated future cash flows to be generated by the asset over an extended period of time and a rate of return that considers the relative risk of achieving the cash flows, the time value of money, and other factors that a willing market participant would consider. Management judgment is required to estimate the amount and timing of future cash flows and the relative risk of achieving those cash flows.

Assumptions and estimates about future values and remaining useful lives are complex and often subjective. They can be affected by a variety of factors, including external factors such as industry and economic trends, and internal factors such as changes in our business strategy and our internal forecasts. For example, if our future operating results do not meet current forecasts or if we experience a sustained decline in our market capitalization that is determined to be indicative of a reduction in fair value of our reporting units, we may be required to record future impairment charges for purchased intangible assets with finite lives. Impairment charges could materially decrease our future results of operations and result in lower asset values on our balance sheet.

Share-Based Compensation

We measure and recognize compensation expense for all share-based payments based on estimated fair value. Share-based compensation expense is recognized based on the fair value on a straight-line basis over the requisite service periods of the awards. The fair value of our restricted stock and performance stock units is based on the market price of our common stock on the date of grant. The determination of the amount of share-based compensation expense for our performance stock units requires the use of certain estimates and assumptions that affect the amount of share-based compensation expense recognized in our consolidated statements of operations. At each reported period, we reassess the probability of the achievement of corporate performance goals to estimate the amount of shares to be released. Any increase or decrease in share-based compensation expense resulting from an adjustment in the estimated shares to be released is treated as a cumulative catch-up in the period of adjustment. If any of the assumptions or estimates used change significantly, share-based compensation expense may differ materially from what we have recorded in the current period.

Income Taxes

Our provision for income taxes, deferred tax assets and liabilities, and reserves for unrecognized tax benefits reflect our best assessment of estimated future taxes to be paid. Judgments and estimates based on interpretations of existing tax laws or regulations in the United States and the numerous foreign jurisdictions where we are subject to income tax are required in determining our provision for income taxes. Changes in tax laws, statutory tax rates, and estimates of our future taxable income could impact the deferred tax assets and liabilities provided for in the consolidated financial statements and would require an adjustment to the provision for income taxes.

Deferred tax assets are regularly assessed to determine the likelihood they will be recovered from future taxable income. A valuation allowance is established when we believe it is more likely than not the future realization of all or some of a deferred tax asset will not be achieved. In evaluating our ability to recover deferred tax assets within the jurisdiction which they arise, we consider all available positive and negative evidence. Factors reviewed include the cumulative pre-tax book income for the past three years, scheduled reversals of deferred tax liabilities, our history of

earnings and reliability of our forecasts, projections of pre-tax book income over the foreseeable future, and the impact of any feasible and prudent tax planning strategies.

We recognize the impact of a tax position in our consolidated financial statements only if that position is more likely than not of being sustained upon examination by taxing authorities, based on the technical merits of the position. Tax authorities regularly examine our returns in the jurisdictions in which we do business and we regularly assess the tax risk of our return filing positions. Due to the complexity of some of the uncertainties, the ultimate resolution may result in payments that are materially different from our current estimate of the tax liability. These differences, as well as any interest and penalties, will be reflected in the provision for income taxes in the period in which they are determined.

QUANTITATIVE AND QUALITATIVE DISCLOSURE ABOUT MARKET RISK

Interest Rate Risk

Our current investment policy with respect to our cash, cash equivalents and short-term investments focuses on maintaining acceptable levels of interest rate risk and liquidity. To achieve these objectives, our policy allows us to maintain a portfolio of cash equivalents and short-term investments in a variety of securities, including money market funds, U.S. Treasury debt and corporate debt securities. Our policy also limits the amount of credit exposure to any one issuer and type of instrument. Under our current policies, we do not use interest rate derivative instruments to manage exposure to interest rate changes. As of January 1, 2023, our cash equivalents consisted primarily of U.S. government money market funds that invest in very liquid investments, namely, cash, government securities and purchase agreements that are collateralized fully with government securities. U.S. government money market funds provide same day liquidity and have a net asset value of $1.00. We have historically maintained a relatively short average maturity for our investment portfolio, and we believe a hypothetical 100 basis point adverse move in interest rates along the entire interest rate yield curve would not materially affect the fair value of our interest-sensitive financial instruments. We held no debt securities as of January 1, 2023.

In March 2021, we issued $500 million of 0.550% notes due 2023 and $500 million of 2.550% notes due 2031. In December 2022, we issued $500 million of 5.800% notes due 2025 and $500 million of 5.750% notes due 2027. We carry the notes at the principal amount, less unamortized discount and debt issuance costs, on our consolidated balance sheets. Because the notes have fixed annual interest rates, we do not have any economic interest rate exposure or financial statement risk associated with changes in interest rates. The fair value of the notes, however, may fluctuate when interest rates change. See note “5. Debt and Other Commitments” for more information.

Foreign Currency Exchange Risk

We conduct a portion of our business in currencies other than our U.S. dollar functional currency. These transactions give rise to cash flows and monetary assets and liabilities that are denominated in currencies other than the U.S. dollar; the value of these amounts are exposed to changes in currency exchange rates from the time the transactions are forecasted or originated until the time the cash settlement is converted into U.S. dollars. Our foreign currency exposures are primarily concentrated in the euro, Japanese yen, Australian dollar, Canadian dollar, Singapore dollar, Chinese Yuan Renminbi, and British pound. We use forward exchange contracts to manage these foreign currency risks and to hedge portions of our foreign currency exposure associated with forecasted revenue transactions. We only use derivative financial instruments to reduce foreign currency exchange rate risks; we do not hold any derivative financial instruments for trading or speculative purposes. The counterparties to these forward exchange contracts expose us to credit-related risks in the event of their non-performance. We mitigate this risk by actively monitoring credit ratings and only selecting major financial institutions as counterparties. Additionally, our risk of credit-related loss is limited to the fair value of these financial contracts, which were not material to our financial position.

Our forward exchange contracts used to manage foreign currency risks related to monetary assets and liabilities have terms of one month or less. Realized and unrealized gains or losses on the fair value of these financial contracts are included in the determination of net income (loss), as they have not been designated for hedge accounting. These contracts, which settle monthly, effectively fix the exchange rate at which these specific monetary assets and liabilities will be settled, so that gains or losses on the forward contracts offset the gains or losses from changes in the value of the underlying monetary assets and liabilities. As of January 1, 2023, the total notional amounts of outstanding forward contracts in place for these foreign currency purchases was $485 million. Our forward exchange contracts used to hedge portions of our foreign currency exposure associated with forecasted revenue transactions have terms of up to 24 months. These derivative financial instruments are designated as cash flow hedges. Gains and losses on these financial contracts, which settle monthly, are generally recorded to revenue in the same period the underlying hedged transactions are recorded. As of January 1, 2023, the total notional amounts of outstanding forward contracts in place for these foreign currency purchases was $425 million.

RECENT ACCOUNTING PRONOUNCEMENTS

For a summary of recent accounting pronouncements applicable to our consolidated financial statements see note “1. Organization and Significant Accounting Policies” within the Consolidated Financial Statements section of this report, which is incorporated herein by reference.

CONSOLIDATED FINANCIAL STATEMENTS

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

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

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Illumina, Inc. (the Company) as of January 1, 2023 and January 2, 2022, the related consolidated statements of operations, comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended January 1, 2023, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at January 1, 2023 and January 2, 2022, and the results of its operations and its cash flows for each of the three years in the period ended January 1, 2023, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of January 1, 2023, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 17, 2023 expressed an unqualified opinion thereon.

Adoption of ASU No. 2020-06

As discussed in Note 1 to the consolidated financial statements, the Company changed its method of accounting for convertible debt instruments as a result of the adoption of Accounting Standards Update (ASU) No. 2020-06, Debt – Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging – Contracts in Entity's Own Equity (Subtopic 815-40), effective January 3, 2022.

Basis for Opinion

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

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

Critical Audit Matters

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

Interim goodwill impairment assessment of GRAIL reporting unit

Description of the Matter

The Company tests goodwill for impairment annually, as of May, or more frequently if events or circumstances indicate it is more likely than not that the fair value of a reporting unit is less than its carrying amount. The Company identified certain triggering events that occurred in the three months ended October 2, 2022 that required an interim goodwill impairment test. Reporting units are tested for impairment by comparing the fair value of each reporting unit to its carrying value. As discussed in Note 4 to the financial statements, as a result of the interim impairment assessment, the Company recorded an impairment loss of $3.9 billion related to the GRAIL reporting unit. The carrying value of goodwill as of January 1, 2023 was $3.2 billion, of which $2.2 billion related to the GRAIL reporting unit.

Auditing the Company's goodwill impairment assessment was complex due to the significant estimation uncertainty in determining the fair value of the GRAIL reporting segment. Management used a combination of income- and market-based approaches to estimate the fair value of the GRAIL reporting unit. A significant emphasis is placed on the appropriateness of the estimate considerations used by management to determine the fair value of the GRAIL reporting unit due to sensitivity of the fair value to the underlying assumptions. The significant assumptions include forecasted revenues for GRAIL and the discount rate used to discount future cash flows. These significant assumptions related to the fair value of the GRAIL reporting unit are forward-looking and could be affected by future economic and market conditions.

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design and tested the operating effectiveness of internal controls over the Company's process for determining the fair value of the GRAIL reporting unit used in the goodwill impairment assessment. This included controls over management's development of the above-described assumptions used in the valuation model applied.

In testing the valuation of the GRAIL reporting unit, we performed audit procedures that included, among others, evaluating the Company's use of the income- and market-based approaches and testing the significant assumptions used in the model, as described above. We evaluated the completeness and accuracy of underlying data used in supporting the assumptions and estimates. We evaluated the reasonableness of projected revenue growth used within the valuations against analyst expectations, industry trends, market trends, and other market information. In addition, we involved valuation specialists to assist in evaluating the Company's selection of the discount rate by comparing it against a discount rate range that was independently developed using publicly available market data for comparable entities.

GRAIL contingent consideration

Description of the Matter

In connection with the August 18, 2021 acquisition of GRAIL, the Company recognized a contingent consideration liability at the estimated fair value on the acquisition date. The Company uses a Monte Carlo simulation model to determine the fair value of the contingent consideration liability each reporting period. As disclosed in Note 3 of the consolidated financial statements, the fair value of the contingent consideration liability as of January 1, 2023 is $412 million. The Company recognized a $203 million gain in the current year as a result of the change in the fair value of the contingent consideration liability.

Auditing the valuation of the contingent consideration liability was complex and required significant auditor judgment due to the high degree of subjectivity in evaluating significant assumptions. The significant assumptions to the model include forecasted revenues for GRAIL and the discount rate based on the estimated timing of payments. These assumptions are forward-looking and could be affected by future economic and market conditions.

How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design and tested the operating effectiveness of internal controls over the Company's process for determining the fair value of the contingent consideration liability related to the GRAIL acquisition. This included controls over management's development of the above-described assumptions used in the valuation model applied. In testing the valuation of the contingent consideration liability, we performed audit procedures that included, among others, evaluating the Company's use of the Monte Carlo simulation model and testing the significant assumptions used in the model, as described above. We evaluated the completeness and accuracy of underlying data used in supporting the assumptions and estimates. We evaluated the reasonableness of projected revenue growth used within the valuations against analyst expectations, industry trends, market trends, and other market information. In addition, we involved valuation specialists to assist in evaluating the methodology used to calculate the fair value of the contingent consideration liability as well as the Company's selection of the discount rate. Our valuation specialists evaluated the discount rate by comparing it against a discount rate range that was independently developed using publicly available market data for comparable entities.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2000.

San Diego, California
February 17, 2023

ILLUMINA, INC.

CONSOLIDATED BALANCE SHEETS
(In millions, except par value)

	January 1, 2023	January 2, 2022
ASSETS		
Current assets:		
Cash and cash equivalents	**$ 2,011**	$ 1,232
Short-term investments	**26**	107
Accounts receivable, net	**671**	648
Inventory, net	**568**	431
Prepaid expenses and other current assets	**285**	295
Total current assets	**3,561**	2,713
Property and equipment, net	**1,091**	1,024
Operating lease right-of-use assets	**653**	672
Goodwill	**3,239**	7,113
Intangible assets, net	**3,285**	3,250
Other assets	**423**	445
Total assets	**$ 12,252**	$ 15,217
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	**$ 293**	$ 332
Accrued liabilities	**1,232**	761
Term notes, current portion	**500**	—
Convertible senior notes, current portion	**748**	—
Total current liabilities	**2,773**	1,093
Operating lease liabilities	**744**	774
Term notes	**1,487**	993
Convertible senior notes	**—**	702
Other long-term liabilities	**649**	915
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, $0.01 par value, 10 million shares authorized; no shares issued and outstanding at January 1, 2023 and January 2, 2022	**—**	—
Common stock, $0.01 par value, 320 million shares authorized; 198 million shares issued and 158 million outstanding at January 1, 2023; 197 million shares issued and 157 million outstanding at January 2, 2022	**2**	2
Additional paid-in capital	**9,207**	8,938
Accumulated other comprehensive income	**3**	17
Retained earnings	**1,142**	5,485
Treasury stock, 40 million shares at both January 1, 2023 and January 2, 2022	**(3,755)**	(3,702)
Total stockholders' equity	**6,599**	10,740
Total liabilities and stockholders' equity	**$ 12,252**	$ 15,217

See accompanying notes to consolidated financial statements.

ILLUMINA, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS
(In millions, except per share amounts)

	Years Ended		
	January 1, 2023	**January 2, 2022**	**January 3, 2021**
Revenue:			
Product revenue	**$ 3,953**	$ 3,968	$ 2,735
Service and other revenue	**631**	558	504
Total revenue	**4,584**	4,526	3,239
Cost of revenue:			
Cost of product revenue	**1,144**	1,060	788
Cost of service and other revenue	**295**	241	220
Amortization of acquired intangible assets	**173**	71	28
Total cost of revenue	**1,612**	1,372	1,036
Gross profit	**2,972**	3,154	2,203
Operating expense:			
Research and development	**1,321**	1,185	682
Selling, general and administrative	**1,297**	2,092	941
Legal contingency and settlement	**619**	—	—
Goodwill impairment	**3,914**	—	—
Total operating expense	**7,151**	3,277	1,623
(Loss) income from operations	**(4,179)**	(123)	580
Other income (expense):			
Interest income	**11**	—	41
Interest expense	**(26)**	(61)	(49)
Other (expense) income, net	**(142)**	1,068	284
Total other (expense) income, net	**(157)**	1,007	276
(Loss) income before income taxes	**(4,336)**	884	856
Provision for income taxes	**68**	122	200
Net (loss) income	**$ (4,404)**	$ 762	$ 656
(Loss) earnings per share:			
Basic	**$ (28.00)**	$ 5.07	$ 4.48
Diluted	**$ (28.00)**	$ 5.04	$ 4.45
Shares used in computing (loss) earnings per share:			
Basic	**157**	150	147
Diluted	**157**	151	148

See accompanying notes to consolidated financial statements.

ILLUMINA, INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(In millions)

	Years Ended		
	January 1, 2023	January 2, 2022	January 3, 2021
Net (loss) income	**$ (4,404)**	$ 762	$ 656
Unrealized loss on available-for-sale debt securities, net of deferred tax	**—**	(1)	(3)
Unrealized (loss) gain on cash flow hedges, net of deferred tax	**(14)**	16	—
Total comprehensive (loss) income	**$ (4,418)**	$ 777	$ 653

See accompanying notes to consolidated financial statements.

ILLUMINA, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In millions)

	Common Stock		Additional Paid-In	Accumulated Other Comprehensive	Retained	Treasury Stock		Total Stockholders'
	Shares	Amount	Capital	Income	Earnings	Shares	Amount	Equity
Ba ance as of December 29, 2019	194	$ 2	$ 3,560	$ 5	$ 4,067	(47)	$ (3,021)	$ 4,613
Net ncome					656			656
Unrea zed oss on ava ab e for sa e debt secur t es, net of deferred tax				(3)				(3)
Issuance of common stock, net of repurchases	1		61			(2)	(827)	(766)
Share based compensat on			194					194
Ba ance as of January 3, 2021	195	2	3,815	2	4,723	(49)	(3,848)	4,694
Net ncome					762			762
Unrea zed oss on ava ab e for sa e debt secur t es, net of deferred tax				(1)				(1)
Unrea zed ga n on cash f ow hedges, net of deferred tax				16				16
Issuance of common stock, net of repurchases	2		60			(1)	(91)	(31)
GRAIL acqu s t on			4,749			10	237	4,986
Exchange of GRAIL cont ngent va ue r ghts			2					2
Share based compensat on			312					312
Balance as of January 2, 2022	**197**	**2**	**8,938**	**17**	**5,485**	**(40)**	**(3,702)**	**10,740**
Net loss					**(4,404)**			**(4,404)**
Unrealized loss on cash flow hedges, net of deferred tax				**(14)**				**(14)**
Issuance of common stock, net of repurchases	**1**		**63**				**(53)**	**10**
Share-based compensation			**299**					**299**
Cumulative-effect adjustment from adoption of ASU 2020-06, net of deferred tax			**(93)**		**61**			**(32)**
Balance as of January 1, 2023	**198**	**$ 2**	**$ 9,207**	**$ 3**	**$ 1,142**	**(40)**	**$ (3,755)**	**$ 6,599**

See accompanying notes to consolidated financial statements.

ILLUMINA, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In millions)

	Years Ended		
	January 1, 2023	January 2, 2022	January 3, 2021
Cash flows from operating activities:			
Net (oss) ncome	**$ (4,404)**	$ 762	$ 656
Adjustments to reconc e net (oss) ncome to net cash prov ded by operat ng act v t es:			
Deprec at on expense	**215**	176	156
Amort zat on of ntang b e assets	**179**	75	31
Share based compensat on expense	**366**	754	194
Accret on of debt d scount on convert b e sen or notes		32	40
Deferred ncome taxes	**(23)**	(76)	117
Goodw mpa rment	**3,914**		
Ga n on prev ous y he d nvestment n GRAIL		(899)	
Ga n on exchange of GRAIL cont ngent va ue r ghts		(86)	
Net osses (ga ns) on strateg c nvestments	**122**	(18)	(291)
Loss (ga n) on He x cont ngent va ue r ght	**7**	(30)	(7)
(Ga n) oss on der vat ve assets re ated to term nated acqu s t on		(26)	116
Change n fa r va ue of cont ngent cons derat on ab t es	**(205)**	4	
Other	**17**	29	(5)
Changes n operat ng assets and ab t es:			
Accounts rece vab e	**(12)**	(164)	89
Inventory	**(135)**	(58)	(12)
Prepa d expenses and other current assets	**16**	(64)	(20)
Operat ng ease r ght of use assets and ab t es, net	**(8)**	(13)	(11)
Other assets	**19**	(27)	(33)
Accounts payab e	**(38)**	60	40
Accrued ab t es	**381**	101	(7)
Other ong term ab t es	**(19)**	13	27
Net cash prov ded by operat ng act v t es	**392**	545	1,080
Cash flows from investing activities:			
Matur t es of ava ab e for sa e secur t es		331	493
Purchases of ava ab e for sa e secur t es		(77)	(1,802)
Sa es of ava ab e for sa e secur t es		1,031	1,298
Purchases of property and equ pment	**(286)**	(208)	(189)
Net (purchases) sa es of strateg c nvestments	**(40)**	246	(124)
Cash rece ved (pa d for) der vat ve assets re ated to term nated acqu s t on		52	(132)
Net cash pa d for acqu s t ons	**(85)**	(2,444)	(98)
Cash pa d for ntang b e asset	**(180)**		
Net cash used n nvest ng act v t es	**(591)**	(1,069)	(554)
Cash flows from financing activities:			
Payments on convert b e sen or notes		(517)	
Payments on cont ngent cons derat on ab t es		(71)	
Net proceeds from ssuance of debt	**991**	988	
Common stock repurchases			(736)
Proceeds from ssuance of common stock	**63**	60	61
Taxes pa d re ated to net share sett ement of equ ty awards	**(54)**	(511)	(91)
Net cash prov ded by (used n) f nanc ng act v t es	**1,000**	(51)	(766)
Effect of exchange rate changes on cash and cash equ va ents	**(22)**	(3)	8
Net ncrease (decrease) n cash and cash equ va ents	**779**	(578)	(232)
Cash and cash equ va ents at beg nn ng of year	**1,232**	1,810	2,042
Cash and cash equ va ents at end of year	**$ 2,011**	$ 1,232	$ 1,810
Supplemental cash flow information:			
Cash pa d for ncome taxes	**$ 122**	$ 233	$ 119
Cash pa d for operat ng ease ab t es	**$ 112**	$ 96	$ 86

See accompanying notes to consolidated financial statements.

ILLUMINA, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Unless the context requires otherwise, references in this report to "Illumina," the "Company," "we," "us," and "our" refer to Illumina, Inc. and its consolidated subsidiaries.

1. ORGANIZATION AND SIGNIFICANT ACCOUNTING POLICIES

Business Overview

We are a provider of sequencing- and array-based solutions, serving customers in the research, clinical and applied markets. Our products are used for applications in the life sciences, oncology, reproductive health, agriculture and other emerging segments. Our customers include leading genomic research centers, academic institutions, government laboratories, and hospitals, as well as pharmaceutical, biotechnology, commercial molecular diagnostic laboratories, and consumer genomics companies.

On August 18, 2021, we acquired GRAIL, a healthcare company focused on early detection of multiple cancers. The acquisition is subject to ongoing legal proceedings, and, currently, GRAIL must be held and operated separately and independently from Illumina pursuant to interim measures ordered by the European Commission, which prohibited our acquisition of GRAIL on September 6, 2022. Refer to note "8. Legal Proceedings" for additional details. We have included the financial results of GRAIL in our consolidated financial statements from the date of acquisition. GRAIL is a separate reportable segment. Refer to note "11. Segments and Geographic Data" for additional information.

Basis of Presentation

The consolidated financial statements have been prepared in conformity with U.S. generally accepted accounting principles and include our accounts, our wholly-owned subsidiaries, and majority-owned or controlled companies. All intercompany transactions and balances have been eliminated in consolidation. Certain prior period amounts have been reclassified to conform to the current period presentation.

Variable Interest Entities (VIEs)

We evaluate our ownership, contractual and other interests in entities that are not wholly-owned to determine if these entities are VIEs, and, if so, whether we are the primary beneficiary of the VIE. In determining whether we are the primary beneficiary of a VIE and therefore required to consolidate the VIE, we apply a qualitative approach that determines whether we have both (1) the power to direct the activities of the VIE that most significantly impact the VIE's economic performance and (2) the obligation to absorb losses of, or the rights to receive benefits from, the VIE that could potentially be significant to that VIE. We continuously perform this assessment, as changes to existing relationships or future transactions may result in the consolidation or deconsolidation of a VIE. As of January 1, 2023 there were no VIEs for which we were the primary beneficiary and for which we were required to consolidate.

Use of Estimates

The preparation of the consolidated financial statements requires that management make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, expenses, and related disclosures of contingent assets and liabilities. Though the COVID-19 pandemic, the armed conflict between Russia and Ukraine, and macroeconomic factors such as inflation, exchange rates and concerns about an economic downturn present additional uncertainty, we continue to use the best information available to inform our critical accounting estimates. Actual results could differ from those estimates.

Fiscal Year

Our fiscal year is the 52 or 53 weeks ending the Sunday closest to December 31, with quarters of 13 or 14 weeks ending the Sunday closest to March 31, June 30, September 30, and December 31. References to 2022, 2021, and 2020 refer to fiscal years ended January 1, 2023, January 2, 2022, and January 3, 2021, respectively. Fiscal years 2022 and 2021 were both 52 weeks, and fiscal year 2020 was 53 weeks.

Functional Currency

The U.S. dollar is the functional currency of our international operations. We re-measure foreign subsidiaries' monetary assets and liabilities to the U.S. dollar and record the net gains or losses resulting from re-measurement in other (expense) income, net in the consolidated statements of operations.

Concentrations of Risk

Customers

We operate in markets that are highly competitive and rapidly changing. Significant technological changes, shifting customer needs, the emergence of competitive products or services with new capabilities, and other factors could negatively impact our operating results. A portion of our customers consist of university and research institutions that management believes are, to some degree, directly or indirectly supported by the United States Government. A significant change in current research funding, particularly with respect to the U.S. National Institutes of Health, could have an adverse impact on future revenues and results of operations.

International sales entail a variety of risks, including currency exchange fluctuations, longer payment cycles, and greater difficulty in accounts receivable collection. We are also subject to general geopolitical risks, such as political, social and economic instability, and changes in diplomatic and trade relations. The risks of international sales are mitigated in part by the extent to which sales are geographically distributed. Shipments to customers outside the United States comprised 50%, 52%, and 49% of total revenue in 2022, 2021, and 2020, respectively. Customers outside the United States represented 54% and 57% of our gross trade accounts receivable balance as of January 1, 2023 and January 2, 2022, respectively.

We had no customers that provided more than 10% of total revenue in 2022, 2021, and 2020. We perform regular reviews of customer activity and associated credit risks and do not require collateral or enter into netting arrangements. Historically, we have not experienced significant credit losses from accounts receivable.

Financial Instruments

We are also subject to risks related to our financial instruments, including cash and cash equivalents, investments, and accounts receivable. Most of our cash and cash equivalents as of January 1, 2023 were deposited with U.S. financial institutions, either domestically or with their foreign branches. Our investment policy restricts the amount of credit exposure to any one issuer to 5% of the portfolio or 5% of the total issue size outstanding at the time of purchase and to any one industry sector, as defined by Clearwater Analytics (Industry Sector Report), to 30% of the portfolio at the time of purchase. There is no limit to the percentage of the portfolio that may be maintained in debt securities, U.S. government-sponsored entities, U.S. Treasury securities, and money market funds. Historically, we have not experienced significant credit losses from financial instruments.

Suppliers

We require customized products and components that currently are available from a limited number of sources. We source certain key products and components included in our products from single vendors. Historically, we have not experienced significant issues sourcing materials to build our products.

Segments

We report segment information based on the management approach. This approach designates the internal reporting used by the Chief Operating Decision Maker (CODM) for making decisions and assessing performance as the source of our reportable segments. The CODM allocates resources and assesses the performance of each operating segment using information about its revenue and income (loss) from operations. Management evaluates the performance of our reportable segments based upon income (loss) from operations. We do not allocate expenses between segments.

Accounting Pronouncements Adopted in 2022

In August 2020, the FASB issued ASU 2020-06, *Debt - Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging - Contracts in Entity's Own Equity (Subtopic 815-40)*. The new standard reduces the number of accounting models for convertible debt instruments, amends the accounting for certain contracts in an entity's own equity, and modifies how certain convertible instruments and contracts that may be settled in cash or shares impact the calculation of diluted earnings per share. Specifically, the guidance removes certain accounting models that separate the embedded conversion features from the host contract for convertible instruments and requires the use of the if-converted method to calculate diluted earnings per share. We adopted the standard on its effective date in the first quarter of 2022 using a modified retrospective approach by recognizing a cumulative-effect adjustment to retained earnings on January 3, 2022. We did not restate prior periods. As a result of the adoption, we increased our convertible senior notes and retained earnings, on January 3, 2022, by $43 million and $61 million, respectively, and decreased our deferred tax liabilities, included in other long-term liabilities on the consolidated balance sheets, and additional paid-in capital by $11 million and $93 million, respectively. Interest expense recognized post-adoption has decreased as a result of accounting for our convertible senior notes as a single liability measured at amortized cost. See note "5. Debt and Other Commitments" for additional details on the adoption of ASU 2020-06.

Accounting Pronouncements Adopted in 2020

In May 2020, the SEC issued Final Rule Release No. 33-10786, *Amendments to Financial Disclosures about Acquired and Disposed Businesses*, which amends the disclosure requirements applicable to acquisitions and dispositions of businesses, including the required pro forma financial information. Among other changes, the final amendments revised the investment and income tests used to determine whether a business acquisition is significant and reduced the filing requirements for financial statements and pro forma financial information of a significant acquired business to cover a maximum of two years. We adopted the amendments in 2020 in connection with our acquisition of GRAIL, which is further described in note "4. Acquisitions, Goodwill and Intangible Assets."

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments - Credit Losses: Measurement of Credit Losses on Financial Instruments*, which amends the impairment model by requiring entities to use a forward-looking approach based on expected losses to estimate credit losses on certain types of financial instruments, including trade receivables and available-for-sale debt securities. We adopted the standard on its effective date in the first quarter of 2020 using a modified retrospective approach. The cumulative effect of applying the new credit loss standard was not material and, therefore, did not result in an adjustment to retained earnings. There was no material difference to the consolidated financial statements in 2020 due to the adoption of ASU 2016-13.

In accordance with ASU 2016-13, a company no longer evaluates whether available-for-sale debt securities in an unrealized loss position are other than temporarily impaired. Instead, a company assesses whether such unrealized loss positions are credit-related. The credit-related portion of unrealized losses, and any subsequent improvements, are recorded in interest income through an allowance account. Unrealized gains and losses that are not credit-related are included in accumulated other comprehensive income. We estimate our allowance for credit losses on our trade receivables as described in our Accounts Receivable policy, below.

Revenue Recognition

Our revenue is generated primarily from the sale of products and services. Product revenue primarily consists of sales of instruments and consumables used in genetic analysis. Service and other revenue primarily consists of revenue generated from genotyping and sequencing services, instrument service contracts, development and licensing agreements, and cancer detection testing services related to the GRAIL business.

We recognize revenue when control of our products and services is transferred to our customers in an amount that reflects the consideration we expect to receive from our customers in exchange for those products and services. This process involves identifying the contract with a customer, determining the performance obligations in the contract, determining the contract price, allocating the contract price to the distinct performance obligations in the contract, and recognizing revenue when the performance obligations have been satisfied. Revenue recognition for contracts with multiple deliverables is based on the separate satisfaction of each distinct performance obligation within the contract. A performance obligation is considered distinct from other obligations in a contract when it provides a benefit to the customer either on its own or together with other resources that are readily available to the customer and is separately identified in the contract. We consider a performance obligation satisfied once we have transferred control of a good or service to the customer, meaning the customer has the ability to use and obtain the benefit of the good or service. The contract price is allocated to each performance obligation in proportion to its standalone selling price. We determine our best estimate of standalone selling price using average selling prices over a rolling 12-month period coupled with an assessment of current market conditions. If the product or service has no history of sales or if the sales volume is not sufficient, we rely upon prices set by management, adjusted for applicable discounts.

Revenue from product sales is recognized generally upon delivery to the end customer, which is when control of the product is deemed to be transferred. Invoicing typically occurs upon shipment and payment is typically due within 30 days from invoice. In instances where right of payment or transfer of title is contingent upon the customer's acceptance of the product, revenue is deferred until all acceptance criteria have been met. Revenue from genotyping and sequencing services, including cancer detection testing services related to the GRAIL business, is recognized when earned, which is generally at the time the genotyping or sequencing analysis data is made available to the customer. Revenue from instrument service contracts is recognized as the services are rendered, typically evenly over the contract term. Revenue from development and licensing agreements generally includes upfront and periodic licensing fees, contract research and development services, or payments for development and regulatory milestones. Revenue for these agreements is recognized when each distinct performance obligation is satisfied.

Revenue is recorded net of discounts, distributor commissions, and sales taxes collected on behalf of governmental authorities. Employee sales commissions are recorded as selling, general and administrative expense when incurred as the amortization period for such costs, if capitalized, would have been one year or less.

In certain markets, products and services are sold to customers through distributors. In most sales through distributors, the product is delivered directly to customers by us. The terms of sales transactions through distributors are consistent with the terms of direct sales to customers.

Earnings (Loss) per Share

Basic earnings (loss) per share is computed based on the weighted average number of common shares outstanding during the period. Diluted earnings (loss) per share is computed based on the sum of the weighted average number of common shares and potentially dilutive common shares outstanding during the period. In loss periods, basic loss per share and diluted loss per share are identical since the effect of potentially dilutive common shares is antidilutive and therefore excluded.

Potentially dilutive common shares consist of shares issuable under convertible senior notes and equity awards. On January 3, 2022, we adopted ASU 2020-06. As a result, beginning in Q1 2022, we utilize the if-converted method to calculate the impact of convertible senior notes on diluted earnings (loss) per share. Prior to the adoption of ASU 2020-06, we applied the treasury stock method when calculating the potential dilutive effect, if any, of convertible senior notes which we intended to settle or have settled in cash the principal outstanding. Under the treasury stock method, convertible senior notes would have a dilutive impact when the average market price of our common stock exceeded the applicable conversion price of the respective notes. Potentially dilutive common shares from equity awards are determined using the average share price for each period under the treasury stock method. In addition, proceeds from exercise of equity awards and the average amount of unrecognized compensation expense for equity awards are assumed to be used to repurchase shares.

The following table presents the calculation of weighted average shares used to calculate basic and diluted earnings (loss) per share:

	Years Ended		
In millions	**January 1, 2023**	**January 2, 2022**	**January 3, 2021**
Weighted average shares outstanding	**157**	150	147
Effect of potentially dilutive common shares from:			
Equity awards	**—**	1	1
Weighted average shares used in calculating diluted earnings (loss) per share	**157**	151	148
Antidilutive shares:			
Convertible senior notes	**2**	—	—
Equity awards	**2**	—	—
Potentially dilutive shares excluded from calculation due to antidilutive effect	**4**	—	—

Fair Value Measurements

The fair value of assets and liabilities are based on the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value maximize the use of observable inputs and minimize the use of unobservable inputs. We use a fair value hierarchy with three levels of inputs, of which the first two are considered observable and the last unobservable, to measure fair value:

- *Level 1* — Quoted prices in active markets for identical assets or liabilities.
- *Level 2* — Inputs, other than Level 1, that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.
- *Level 3* — Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

The carrying amounts of financial instruments such as cash and cash equivalents, accounts receivable, prepaid expenses and other current assets, accounts payable, and accrued liabilities approximate the related fair values due to the short-term maturities of these instruments.

Cash Equivalents and Debt Securities

Cash equivalents are comprised of short-term, highly-liquid investments with maturities of 90 days or less at the date of purchase.

We have historically held and, from time to time, may hold debt securities in U.S. government-sponsored entities, corporate debt securities, and U.S. Treasury securities. In 2021, we sold all of our available-for-sale debt securities in order to fund the GRAIL acquisition, and we did not hold any debt securities in 2022. We have the ability, if necessary, to liquidate such short-term debt securities to meet our liquidity needs. Accordingly, investments with contractual maturities greater than one year from the date of purchase are classified as short-term investments in the consolidated balance sheets. We classify short-term debt investments as available-for-sale at the time of purchase and evaluate such classification as of each balance sheet date. All short-term debt investments are recorded at estimated fair value. We evaluate available-for-sale debt securities in an unrealized loss position to assess whether such unrealized loss positions are credit-related. The credit-related portion of unrealized losses, and any subsequent improvements, are recorded in interest income through an allowance account. Unrealized gains and losses that are not credit-related are included in accumulated other comprehensive income, a component of stockholders' equity. Realized gains and losses are determined based on the specific identification method and are recorded in interest income in the consolidated statements of operations.

Equity Securities and Investments

We have strategic investments in privately-held companies (non-marketable equity securities) and companies that have completed initial public offerings (marketable equity securities). Our marketable equity securities are measured at fair value. Our non-marketable equity securities without readily determinable market values are initially measured at cost and adjusted to fair value for observable transactions for identical or similar investments of the same issuer or impairment. Equity investments are classified as current, short-term investments, or noncurrent, recorded in other assets, based on the nature of the securities and their availability for use in current operations. Unrealized gains and losses on our equity investments are recorded in other (expense) income, net in the consolidated statements of operations. Our equity investments are assessed for impairment quarterly. Impairment losses, equal to the difference between the carrying value and the fair value of the investment, are recorded in other (expense) income, net.

We use the equity method to account for investments through which we have the ability to exercise significant influence, but not control, over the investee. Such investments are recorded in other assets, and our share of net income or loss is recognized on a one quarter lag in other (expense) income, net.

Accounts Receivable

Trade accounts receivable are recorded at the net invoice value and are not interest-bearing. Receivables are considered past due based on the contractual payment terms. We reserve a percentage of our trade receivable balance based on collection history and current economic trends that we expect will impact the level of credit losses over the life of our receivables. These reserves are re-evaluated on a regular basis and adjusted, as needed. Once a receivable is deemed to be uncollectible, such balance is charged against the reserve.

Inventory

Inventory is stated at the lower of cost or net realizable value, on a first-in, first-out basis. Inventory includes raw materials and finished goods that may be used in the research and development process, and such items are expensed as consumed or capitalized as property and equipment and depreciated. Inventory write-downs for slow-moving, excess, and obsolete inventories are estimated based on product life cycles, quality issues, historical experience, and usage forecasts.

Property and Equipment

Property and equipment are stated at cost, subject to review for impairment, and depreciated over the estimated useful lives of the assets, using the straight-line method. Depreciation of leasehold improvements is recorded over the shorter of the lease term or the estimated useful life of the related assets. Maintenance and repairs are expensed as incurred. When assets are sold, or otherwise disposed of, the cost and related accumulated depreciation are removed from the accounts and any gain or loss is included in operating expense.

Costs incurred to develop internal-use software during the application development stage are recorded as computer software costs, at cost. Costs incurred in the development of such internal-use software, including external direct costs of materials and services and applicable compensation costs of employees devoted to specific software application development, are capitalized. Costs incurred outside of the application development stage are expensed as incurred.

The estimated useful lives of the major classes of property and equipment are generally as follows:

Buildings and leasehold improvements	4 to 20 years
Machinery and equipment	3 to 5 years
Computer hardware and software	3 to 9 years
Furniture and fixtures	7 years

Leases

We lease approximately 3.0 million square feet of office, lab, manufacturing, and distribution facilities under various non-cancellable operating lease agreements (real estate leases). Our real estate leases have remaining lease terms of approximately 1 year to 17 years, which represent the non-cancellable periods of the leases and include extension options that we determined are reasonably certain to be exercised. We exclude extension options that are not reasonably certain to be exercised from our lease terms, ranging from approximately 2 years to 20 years. Our lease payments consist primarily of fixed rental payments for the right to use the underlying leased assets over the lease terms, as well as payments for common-area-maintenance and administrative services. We often receive customary incentives from our landlords, such as reimbursements for tenant improvements and rent abatement periods, which effectively reduce the total lease payments owed for these leases. Leases are classified as operating or financing at commencement. We do not have any material financing leases.

Operating lease right-of-use assets and liabilities on our consolidated balance sheets represent the present value of our remaining lease payments over the remaining lease terms. We do not allocate lease payments to non-lease components; therefore, fixed payments for common-area-maintenance and administrative services are included in our operating lease right-of-use assets and liabilities. We use our incremental borrowing rate to calculate the present value of our lease payments, as the implicit rates in our leases are not readily determinable. Operating lease costs consist primarily of the fixed lease payments included in our operating lease liabilities and are recorded on a straight-line basis over the lease terms. We sublease certain real estate to third parties and this sublease income is also recorded on a straight-line basis.

Business Combinations

Under the acquisition method of accounting, we allocate the fair value of the total consideration transferred to the tangible and identifiable intangible assets acquired and liabilities assumed based on their estimated fair values on the date of acquisition. These valuations require us to make estimates and assumptions, especially with respect to intangible assets. We record the excess consideration over the aggregate fair value of tangible and intangible assets, net of liabilities assumed, as goodwill. Costs that we incur to complete the business combination, such as legal and other professional fees, are expensed as they are incurred.

In connection with certain acquisitions, contingent consideration can be earned by the sellers upon completion of certain future performance milestones. In these cases, a liability is recorded on the acquisition date, as a component of accrued liabilities and/or other long-term liabilities, for an estimate of the acquisition-date fair value of the contingent consideration. These estimates require management judgment, including probabilities of achieving certain future milestones. Changes in the fair value of the contingent consideration subsequent to the acquisition date are recognized in selling, general and administrative expense in our consolidated statements of operations.

If the initial accounting for a business combination is incomplete by the end of a reporting period that falls within the measurement period (not to exceed a year from the date of acquisition), we report provisional amounts in our financial statements. During the measurement period, we adjust the provisional amounts recognized at the acquisition date to reflect new information obtained about facts and circumstances that existed as of the acquisition date that, if known, would have affected the measurement of the amounts recognized as of that date. We record these adjustments to the provisional amounts with a corresponding offset to goodwill. Any adjustments identified after the measurement period are recorded in the consolidated statements of operations.

Goodwill, Intangible Assets and Other Long-Lived Assets

Assets acquired, including intangible assets and capitalized in-process research and development (IPR&D), and liabilities assumed are measured at fair value as of the acquisition date. Goodwill, which has an indefinite useful life, represents the excess of cost over fair value of the net assets acquired. Intangible assets acquired in a business combination that are used for IPR&D activities are considered indefinite lived until the completion or abandonment of the associated research and development efforts. Upon reaching the end of the relevant research and development project (i.e., upon commercialization), the IPR&D asset is amortized over its estimated useful life. If the relevant research and development project is abandoned, the IPR&D asset is expensed in the period of abandonment.

Goodwill and IPR&D are not amortized; however, they are reviewed for impairment at least annually during the second quarter, or more frequently if an event occurs indicating the potential for impairment. Goodwill and IPR&D are considered to be impaired if the carrying value of the reporting unit or IPR&D asset exceeds its respective fair value.

We perform our goodwill impairment analysis at the reporting unit level, which aligns with our reporting structure and availability of discrete financial information. During the goodwill impairment review, we assess qualitative factors to determine whether it is more likely than not that the fair values of our reporting units are less than the carrying amounts, including goodwill. The qualitative factors include, but are not limited to, macroeconomic conditions, industry and market considerations, and our overall financial performance. If, after assessing the totality of these qualitative factors, we determine that it is not more likely than not that the fair values of our reporting units are less than the carrying amounts, then no additional assessment is deemed necessary. Otherwise, we proceed to compare the estimated fair values of the reporting units with the carrying values, including goodwill. If the carrying amount of a reporting unit exceeds its fair value, we record an impairment loss based on the difference. We may elect to bypass the qualitative assessment in a period and proceed to perform the quantitative goodwill impairment test.

Our identifiable intangible assets with a finite life are typically comprised of acquired developed technologies, licensed technologies, customer relationships, license agreements, and trade names. The cost of identifiable intangible assets with finite lives is generally amortized on a straight-line basis over the assets' respective estimated useful lives.

We perform regular reviews to determine if any event has occurred that may indicate that intangible assets with finite useful lives and other long-lived assets are potentially impaired. If indicators of impairment exist, an impairment test is performed to assess the recoverability of the affected assets by determining whether the carrying amount of such assets exceeds the undiscounted expected future cash flows. If the affected assets are not recoverable, we estimate the fair value of the assets and record an impairment loss if the carrying value of the assets exceeds the fair value. Factors that may indicate potential impairment include a significant decline in our stock price and market capitalization compared to the net book value, significant changes in the ability of a particular asset to generate positive cash flows for our strategic business objectives, and the pattern of utilization of a particular asset.

Derivative Financial Instruments

We are exposed to foreign exchange rate risks in the normal course of business and use derivative financial instruments to partially offset this exposure. We do not use derivative financial instruments for speculative or trading purposes. Foreign exchange contracts are carried at fair value in other current assets, other assets, accrued liabilities, or other long-term liabilities, as appropriate, on the consolidated balance sheets.

We use foreign exchange forward contracts to manage foreign currency risks related to monetary assets and liabilities denominated in currencies other than the U.S. dollar. These derivative financial instruments have terms of one month or less and are not designated as hedging instruments. Changes in fair value of these derivatives are recognized in other (expense) income, net, along with the re-measurement gain or loss on the foreign currency denominated assets or liabilities. As of January 1, 2023, we had foreign exchange forward contracts in place to hedge exposures to monetary assets and liabilities denominated in the euro, Japanese yen, Australian dollar, Canadian dollar, Singapore dollar, Chinese Yuan Renminbi, and British pound. As of January 1, 2023 and January 2, 2022, the total notional amounts of outstanding forward contracts in place for these foreign currency purchases were $485 million and $462 million, respectively.

We also use foreign currency forward contracts to hedge portions of our foreign currency exposure associated with forecasted revenue transactions. These derivative financial instruments have terms up to 24 months and are designated as cash flow hedges. Changes in fair value of our cash flow hedges are recorded as a component of accumulated other comprehensive income and are reclassified to revenue in the same period the underlying hedged transactions are recorded. We regularly review the effectiveness of our cash flow hedges and consider them to be ineffective if it becomes probable that the forecasted transactions will not occur in the identified period. Changes in fair value of the ineffective portions of our cash flow hedges, if any, are recognized in other (expense) income, net. As of January 1, 2023, we had foreign currency forward contracts in place to hedge exposures associated with forecasted revenue transactions denominated in the euro, Japanese yen, Australian dollar, and Canadian dollar. As of January 1, 2023 and January 2, 2022, the total notional amounts of outstanding cash flow hedge contracts in place for these foreign currency purchases were $425 million and $450 million, respectively.

We reclassified $53 million and $10 million to revenue in 2022 and 2021, respectively. No amounts were reclassified to revenue in 2020. As of January 1, 2023, the fair value of the foreign currency forward contracts recorded in total assets and in total liabilities was $8 million and $6 million, respectively. As of January 2, 2022, the fair value of foreign currency forward contracts recorded in total assets was $19 million. The estimated net gains reported in accumulated other comprehensive income that are expected to be reclassified into earnings within the next 12 months are $2 million as of January 1, 2023.

Warranties

We generally provide a one-year warranty on instruments. Additionally, we provide a warranty on consumables through the expiration date, which generally ranges from six to twelve months after the manufacture date. At the time revenue is recognized, an accrual is established for estimated warranty expenses based on historical experience as well as anticipated product performance. We periodically review the warranty reserve for adequacy and adjust the warranty accrual, if necessary, based on actual experience and estimated costs to be incurred. Warranty expense is recorded as a component of cost of product revenue.

Share-Based Compensation

Share-based compensation expense is incurred related to restricted stock, cash-based equity incentive awards, Employee Stock Purchase Plan (ESPP), and stock options.

Restricted stock units (RSU) and performance stock units (PSU) are both considered restricted stock. The fair value of restricted stock is determined by the closing market price of our common stock on the date of grant. Share-based compensation expense is recognized based on the fair value on a straight-line basis over the requisite service periods of the awards. PSU represents a right to receive a certain number of shares of common stock based on the achievement of corporate performance goals and continued employment during the vesting period. At each reporting period, we reassess the probability of the achievement of such corporate performance goals and any increase or decrease in share-based compensation expense resulting from an adjustment in the estimated shares to be released is treated as a cumulative catch-up in the period of adjustment.

Cash-based equity incentive awards are classified as liability awards, as such awards will be settled in cash. For purposes of valuation and performance measurement of the awards, GRAIL's stand-alone valuation, as determined by GRAIL using a reasonable calculation and based on advice from independent valuation experts and analyses, is used. The fair value of the awards is recorded over the respective vesting periods of the awards, with recognition of a corresponding liability recorded in accrued liabilities in the consolidated balance sheets. The awards are remeasured to fair value at each reporting date until the awards are settled, with changes in fair value recognized in share-based compensation expense.

The Black-Scholes-Merton option-pricing model is used to estimate the fair value of stock purchased under our ESPP and stock options granted. The model assumptions include expected volatility, term, dividends, and the risk-free interest rate. The expected volatility is generally determined by weighing the historical and implied volatility of our common stock. The historical volatility is generally commensurate with the estimated expected term, adjusted for the impact of unusual fluctuations and other relevant factors. The implied volatility is calculated from the implied market volatility of exchange-traded call options on our common stock. The expected term is generally based on historical forfeiture experience, exercise activity, and on the terms and conditions of the stock awards. The expected dividend yield is determined to be 0% given that we have never declared or paid cash dividends on our common stock and do not anticipate paying such cash dividends. The risk-free interest rate is based upon U.S. Treasury securities with remaining terms similar to the expected term of the share-based awards.

Forfeitures are accounted for, as incurred, as a reversal of share-based compensation expense related to awards that will not vest.

Shipping and Handling Expenses

Shipping and handling expenses are included in cost of product revenue.

Research and Development

Research and development expenses include personnel expenses, contractor fees, facilities-related costs, material costs, and license fees. Expenditures relating to research and development are expensed in the period incurred.

Advertising Costs

Advertising costs are expensed as incurred. Advertising costs were $53 million, $48 million, and $28 million in 2022, 2021, and 2020, respectively.

Income Taxes

The provision for income taxes is computed using the asset and liability method, under which deferred tax assets and liabilities are recognized for the expected future tax consequences of temporary differences between the financial reporting and tax bases of assets and liabilities, and for the expected future tax benefit to be derived from tax loss and credit carryforwards. Deferred tax assets and liabilities are determined using the enacted tax rates in effect for the years in which those tax assets are expected to be realized. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in the provision for income taxes in the period that includes the enactment date.

Deferred tax assets are regularly assessed to determine the likelihood they will be recovered from future taxable income. A valuation allowance is established when we believe it is more likely than not the future realization of all or some of a deferred tax asset will not be achieved. In evaluating the ability to recover deferred tax assets within the jurisdiction which they arise, we consider all available positive and negative evidence. Factors reviewed include the cumulative pre-tax book income for the past three years, scheduled reversals of deferred tax liabilities, history of earnings and reliable forecasting, projections of pre-tax book income over the foreseeable future, and the impact of any feasible and prudent tax planning strategies.

The impact of a tax position is recognized in the consolidated financial statements only if that position is more likely than not of being sustained upon examination by taxing authorities, based on the technical merits of the position. Any interest and penalties related to uncertain tax positions will be reflected in income tax expense.

2. REVENUE

Our revenue is generated primarily from the sale of products and services. Product revenue primarily consists of sales of instruments and consumables used in genetic analysis. Service and other revenue primarily consists of revenue generated from genotyping and sequencing services, instrument service contracts, development and licensing agreements, and cancer detection testing services related to the GRAIL business.

Revenue by Source

	2022			2021			2020		
In millions	**Sequencing**	**Microarray**	**Total**	**Sequencing**	**Microarray**	**Total**	**Sequencing**	**Microarray**	**Total**
Consumables	**$ 2,919**	**$ 306**	**$3,225**	$ 2,911	$ 306	$3,217	$ 2,039	$ 265	$2,304
Instruments	**709**	**19**	**728**	734	17	751	417	14	431
Total product revenue	**3,628**	**325**	**3,953**	3,645	323	3,968	2,456	279	2,735
Service and other revenue	**543**	**88**	**631**	464	94	558	423	81	504
Total revenue	**$ 4,171**	**$ 413**	**$4,584**	$ 4,109	$ 417	$4,526	$ 2,879	$ 360	$3,239

Revenue by Geographic Area

Based on region of destination (in millions)	2022	2021	2020
Americas [1]	**$ 2,479**	$ 2,358	$ 1,744
Europe, Middle East, and Africa	**1,215**	1,289	886
Greater China [2]	**472**	502	342
Asia-Pacific	**418**	377	267
Total revenue	**$ 4,584**	$ 4,526	$ 3,239

(1) Revenue for the Amer cas reg on nc uded Un ted States revenue of $2,290 m on, $2,195 m on, and $1,655 m on n 2022, 2021, and 2020, respect ve y.
(2) Reg on nc udes revenue from Ch na, Ta wan, and Hong Kong.

Performance Obligations

We regularly enter into contracts with multiple performance obligations. These contracts are believed to be firm as of the balance sheet date. However, we may allow customers to make product substitutions as we launch new products. The timing of shipments depends on several factors, including agreed upon shipping schedules, which may span multiple quarters. Most performance obligations are generally satisfied within a short time frame, approximately three to six months, after the contract execution date. As of January 1, 2023, the aggregate amount of the transaction price allocated to remaining performance obligations was $1,030 million, of which approximately 89% is expected to be converted to revenue in 2023, approximately 7% in the following twelve months, and the remainder thereafter.

Contract Assets and Liabilities

Contract assets, which consist of revenue recognized and performance obligations satisfied or partially satisfied in advance of customer billing, as of January 1, 2023 and January 2, 2022 were $17 million and $16 million, respectively, all of which were short-term and recorded in prepaid expenses and other current assets.

Contract liabilities, which consist of deferred revenue and customer deposits, as of January 1, 2023 and January 2, 2022 were $308 million and $297 million, respectively, of which the short-term portions of $245 million and $234 million, respectively, were recorded in accrued liabilities and the remaining long-term portions were recorded in other long-term liabilities. Revenue recorded in 2022 included $234 million of previously deferred revenue that was included in contract liabilities as of January 2, 2022.

3. INVESTMENTS AND FAIR VALUE MEASUREMENTS

Strategic Investments

Marketable Equity Securities

Our short-term investments consist of marketable equity securities. As of January 1, 2023 and January 2, 2022, the fair value of our marketable equity securities totaled $26 million and $107 million, respectively.

Gains and losses recognized in other (expense) income, net on our marketable equity securities for 2022, 2021, and 2020 were as follows:

In millions	2022	2021	2020
Net (losses) gains recognized during the period on marketable equity securities	**$ (81)**	$ (52)	$ 270
Less: Net losses recognized during the period on marketable equity securities sold during the period	**—**	89	—
Net unrealized (losses) gains recognized during the period on marketable equity securities still held at the reporting date	**$ (81)**	$ 37	$ 270

Non-Marketable Equity Securities

As of January 1, 2023 and January 2, 2022, the aggregate carrying amounts of our non-marketable equity securities without readily determinable fair values, included in other assets, were $28 million and $40 million, respectively.

Revenue recognized from transactions with our strategic investees was $113 million, $74 million, and $62 million in 2022, 2021, and 2020, respectively.

Venture Funds

We invest in two venture capital investment funds (the Funds) with capital commitments of $100 million, callable through April 2026, and up to $150 million, callable through July 2029, respectively, of which $11 million and up to $88 million, respectively, remained callable as of January 1, 2023. Our investments in the Funds are accounted for as equity-method investments. The aggregate carrying amounts of the Funds, included in other assets, were $183 million and $173 million as of January 1, 2023 and January 2, 2022, respectively. We recorded a net unrealized loss of $25 million in 2022, and net unrealized gains of $55 million and $20 million in 2021 and 2020, respectively, in other (expense) income, net.

Helix Contingent Value Right

In conjunction with the deconsolidation of Helix Holdings I, LLC (Helix) in April 2019, we received a contingent value right with a 7-year term that entitles us to consideration dependent upon the outcome of Helix's future financing and/or liquidity events. Changes in the fair value of our contingent value right resulted in an unrealized loss of $7 million in 2022 and unrealized gains of $30 million and $7 million in 2021 and 2020, respectively, included in other (expense) income, net.

Fair Value Measurements

The following table presents the hierarchy for assets and liabilities measured at fair value on a recurring basis:

	January 1, 2023				January 2, 2022			
In millions	**Level 1**	**Level 2**	**Level 3**	**Total**	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets:								
Money market funds (cash equivalents)	**$ 1,642**	**$ —**	**$ —**	**$ 1,642**	$ 688	$ —	$ —	$ 688
Marketable equity securities	**26**	**—**	**—**	**26**	107	—	—	107
Helix contingent value right	**—**	**—**	**58**	**58**	—	—	65	65
Deferred compensation plan assets	**—**	**52**	**—**	**52**	—	60	—	60
Total assets measured at fair value	**$ 1,668**	**$ 52**	**$ 58**	**$ 1,778**	$ 795	$ 60	$ 65	$ 920
Liabilities:								
Contingent consideration liabilities	**$ —**	**$ —**	**$ 412**	**$ 412**	$ —	$ —	$ 615	$ 615
Deferred compensation plan liability	**—**	**51**	**—**	**51**	—	56	—	56
Total liabilities measured at fair value	**$ —**	**$ 51**	**$ 412**	**$ 463**	$ —	$ 56	$ 615	$ 671

Our marketable equity securities are measured at fair value based on quoted trade prices in active markets.

Our deferred compensation plan assets consist primarily of investments in life insurance contracts carried at cash surrender value, which reflects the net asset value of the underlying publicly traded mutual funds. We perform control procedures to corroborate the fair value of our holdings, including comparing valuations obtained from our investment service provider to valuations reported by our asset custodians, validating pricing sources and models, and reviewing key model inputs, if necessary.

We elected the fair value option to measure the contingent value right received from Helix. The fair value of such contingent value right, included in other assets, is derived using a Monte Carlo simulation. Estimates and assumptions used in the Monte Carlo simulation include probabilities related to the timing and outcome of future financing and/or liquidity events, assumptions regarding collectibility and volatility, and an estimated equity value of Helix. These unobservable inputs represent a Level 3 measurement because they are supported by little or no market activity and reflect our own assumptions in measuring fair value.

We reassess the fair value of contingent consideration related to acquisitions on a quarterly basis. Changes in the fair value of contingent consideration subsequent to the acquisition date are recognized in selling, general and administrative expense in our consolidated statements of operations.

The contingent value rights issued as part of the GRAIL acquisition entitle the holders to receive future cash payments on a quarterly basis (Covered Revenue Payments) representing a pro rata portion of certain GRAIL-related revenues (Covered Revenues) each year for a 12-year period. As defined in the Contingent Value Rights Agreement, this will reflect a 2.5% payment right to the first $1 billion of revenue each year for 12 years. Revenue above $1 billion each year will be subject to a 9% contingent payment right during this same period. Covered Revenues for Q4 2021, Q1 2022, Q2 2022, and Q3 2022 were $42 million in aggregate, driven primarily by sales of GRAIL's Galleri test. The aggregate Covered Revenue Payments relating to such periods were approximately $396,000 in 2022; however, pursuant to the Contingent Value Rights Agreement, a portion of the Covered Revenue Payments were applied to reimburse us for certain expenses.

We use a Monte Carlo simulation to estimate the fair value of contingent consideration related to the GRAIL acquisition. Estimates and assumptions used in the Monte Carlo simulation include forecasted revenues for GRAIL, a revenue risk premium, a revenue volatility estimate, an operational leverage ratio and a counterparty credit spread. These unobservable inputs represent a Level 3 measurement because they are supported by little or no market activity and reflect our own assumptions in measuring fair value. The fair value of our contingent consideration liability related to the GRAIL acquisition was $412 million and $615 million as of January 1, 2023 and January 2, 2022, respectively, of which $411 million and $614 million, respectively, was included in other long-term liabilities, with the remaining balances included in accrued liabilities.

Changes in the estimated fair value of our contingent consideration liabilities were as follows:

In millions	
Balance as of January 3, 2021	$ —
Acquisition of GRAIL	762
Other acquisition	14
Measurement period adjustment	(5)
Cash payments	(15)
Exchange of GRAIL contingent value rights	(145)
Change in estimated fair value	4
Balance as of January 2, 2022	**615**
Acquisition	**2**
Change in estimated fair value	**(205)**
Balance as of January 1, 2023	**$ 412**

We recorded a measurement period adjustment in Q4 2021 related to the acquisition of GRAIL to reduce the acquisition-date fair value of contingent consideration by $5 million as a result of revised future cash flow estimates. The measurement period adjustment would have resulted in an increase of $7 million to the gain recorded in Q3 2021 for the change in the estimated fair value of the contingent consideration liability. The measurement period adjustment was recorded in our consolidated financial statements as of and for the year ended 2021 and was made to reflect facts and circumstances that existed as of the acquisition date.

We recorded a contingent consideration liability of $14 million as a result of an acquisition completed in Q2 2021. The acquisition-date fair value of the contingent consideration was derived using the income approach. Assumptions used to estimate the liability included the probability of achieving certain milestones and a discount rate. These unobservable inputs represented a Level 3 measurement because they were supported by little or no market activity and reflected our own assumptions in measuring fair value. We recorded an expense of $1 million in selling, general and administrative expense in 2021 due to the change in estimated fair value of the contingent consideration and made a payment of $15 million in Q4 2021 upon achievement of the milestones.

4. ACQUISITIONS, GOODWILL AND INTANGIBLE ASSETS

Acquisition of GRAIL, Inc.

On August 18, 2021, we completed our acquisition of GRAIL, a healthcare company focused on early detection of multiple cancers. The acquisition is expected to accelerate access and adoption of GRAIL's blood test, Galleri, that detects various types of cancers before they are symptomatic. The acquisition is subject to ongoing legal proceedings. Currently, GRAIL must be held and operated separately and independently from Illumina pursuant to interim measures ordered by the European Commission, which prohibited our acquisition of GRAIL on September 6, 2022. Refer to note "8. Legal Proceedings" for further details. As a result of the acquisition, GRAIL stockholders received as consideration (i) cash, (ii) shares of Illumina common stock and (iii) at their election, either a contingent value right or additional shares of Illumina common stock. We issued 9.8 million common shares as part of the consideration.

GRAIL is a separate reportable segment. See note "11. Segment and Geographic Data" for more information. We have included the financial results of GRAIL in the consolidated financial statements from the date of acquisition.

In Q4 2021, we recorded a measurement period adjustment related to the valuations of contingent consideration and our previously held investment in GRAIL that reduced the acquisition-date fair value of each by $5 million and $1 million, respectively, and reduced the acquisition-date fair value of goodwill by $6 million.

The total purchase price consisted of the following:

In millions	As Adjusted
Cash	$ 2,862
Fair value of common stock issued	4,975
Fair value of contingent consideration	757
Fair value of previously held investment	1,149
Settlement of preexisting relationships	2
Total purchase price	$ 9,745

The contingent consideration relates to the GRAIL stockholders who elected to receive contingent value rights as part of the acquisition (the Contingent Value Rights Agreement). The contingent value rights entitle the holders to receive future cash payments representing a pro rata portion of certain GRAIL-related revenues each year for a 12-year period starting at the acquisition date. This will reflect a 2.5% payment right to the first $1 billion of revenue each year for 12 years. Revenue above $1 billion each year will be subject to a 9% contingent payment right during this same period. The acquisition-date fair value of the contingent consideration was measured using a Monte Carlo simulation. Estimates and assumptions used in the fair value assessment included forecasted revenues for GRAIL, a revenue risk premium, a revenue volatility estimate, an operational leverage ratio and a counterparty credit spread. In December 2021, we exchanged approximately 73 million contingent value rights, that were issued as part of the acquisition, for an aggregate cash payment of $57 million and the issuance of $2 million in shares of our common stock. As a result of the exchange, we recognized a gain of $86 million in other (expense) income, net in 2021, which

represented the difference between the fair value of the contingent consideration liability for the contingent value rights exchanged of $145 million and the total consideration transferred of $59 million.

Prior to the acquisition, we owned a 12% interest in GRAIL. Authoritative guidance on accounting for business combinations requires that an acquirer remeasure its previously held equity investment in the acquiree at its acquisition-date fair value and recognize the resulting gain or loss in earnings. We remeasured our previously held equity investment to its fair value, as of the date of acquisition, based on the fair value of total consideration transferred and a discount for lack of control. Estimates and assumptions used in the remeasurement represent a Level 3 measurement because they are supported by little or no market activity and reflect our own assumptions in measuring the fair value. As a result of the remeasurement, we valued our previously held equity investment in GRAIL at $1.1 billion and recognized a gain of $899 million, included in other (expense) income, net, in 2021.

In connection with the acquisition, we accelerated the vesting of certain outstanding and unvested equity awards of GRAIL employees. Approximately $69 million was included in the purchase price related to the fair value of accelerated equity awards attributable to the pre-combination period, with the fair value attributable to the post-combination period of $615 million included in share-based compensation expense in 2021. In addition, we issued Illumina equity awards to GRAIL employees in exchange for any of their remaining outstanding and unvested GRAIL equity awards (the “replacement awards”) at acquisition. The replacement awards consist of restricted stock units and performance stock options. The terms of the replacement awards are substantially similar to the former GRAIL equity awards for which they were exchanged. The fair value of the replacement awards was $48 million, all of which is attributable to post-combination service, and will be recognized as share-based compensation expense over the remaining vesting period subsequent to the acquisition. The weighted-average acquisition-date fair value of the replacement performance stock options was determined using the Black-Scholes option pricing model with the following assumptions: (i) market price of $510.61 per share, which was the closing price of Illumina’s common stock on the acquisition date; (ii) weighted average expected term ranging from 1.6 years to 2.2 years; (iii) weighted-average risk-free interest rate ranging from 0.17% to 0.28%; (iv) weighted average annualized volatility ranging from 40% to 43%; and (v) no dividend yield. The weighted-average acquisition-date fair value per share of the replaced performance stock options was $424.39. Refer to note “6. Stockholders’ Equity” for more information.

We finalized the allocation of the purchase price in August 2022. The fair values of assets acquired and liabilities assumed were:

In millions	As Initially Reported	Measurement Period Adjustments	As Adjusted
Cash and cash equivalents	$ 571	$ —	**$ 571**
Property and equipment	89	—	**89**
Operating lease right-of-use assets	121	—	**121**
Goodwill	6,082	9	**6,091**
Intangible assets	3,180	(60)	**3,120**
Other current and noncurrent assets	35	—	**35**
Deferred tax liability	(82)	46	**(36)**
Long-term lease liabilities	(97)	—	**(97)**
Other current and noncurrent liabilities	(148)	(1)	**(149)**
Total net assets acquired	$ 9,751	$ (6)	**$ 9,745**

We recorded a measurement period adjustment in Q3 2022 to decrease goodwill and increase deferred tax assets by $6 million, as a result of finalizing GRAIL’s U.S. tax returns. In Q4 2021, we recorded measurement period adjustments to decrease intangible assets, specifically, developed technology, as a result of revised future cash flow estimates and to decrease deferred tax liability as a result of changes in net operating loss estimates from the initial purchase price allocation. These measurement period adjustments were made to reflect facts and circumstances that existed as of the acquisition date. The measurement period adjustment related to the developed technology intangible asset would have resulted in an insignificant decrease in amortization expense recorded in Q3 2021. The measurement period adjustments have been and were recorded in our consolidated financial statements as of and for the years ended 2022 and 2021, as appropriate.

Goodwill is primarily attributable to assembled workforce, expanded market opportunities, and expected synergies to be achieved. The goodwill recognized was assigned to the GRAIL segment and is not deductible for tax purposes.

The fair values assigned to identifiable intangible assets acquired were as follows:

In millions except years	Fair Value (as adjusted)	Estimated Useful Life
Developed technology	$ 2,410	18
Trade name	40	9
In-process research and development (IPR&D)	670	Indefinite
Total intangible assets	$ 3,120	

The fair values of the developed technology, trade name and IPR&D were estimated using an income approach. Under the income approach, an intangible asset's fair value is equal to the present value of future economic benefits to be derived from ownership of the asset. The estimated fair values were developed by discounting future net cash flows to their present value at market-based rates of return and inclusive of an assumption for technology obsolescence. The useful lives of the intangible assets for amortization purposes were determined by considering the period of expected cash flows used to measure the fair values of the intangible assets adjusted as appropriate for entity-specific factors including legal, regulatory, contractual, competitive, economic and other factors that may limit the useful life. The developed technology and trade name assets are amortized on a straight-line basis over their estimated useful lives. As of January 1, 2023, the research and development project had not been completed or abandoned and, therefore, the IPR&D intangible asset is not currently subject to amortization.

The transaction costs associated with the acquisition of GRAIL, excluding any Continuation Payments paid to GRAIL prior to the close of the acquisition, consisted primarily of legal, regulatory and financial advisory fees of approximately $156 million, which were expensed as incurred as selling, general and administrative expense in 2021.

Unaudited Pro Forma Financial Information

The following unaudited pro forma financial information summarizes the combined results of operations of Illumina and GRAIL as if the companies had been combined as of the beginning of our fiscal year 2020.

In millions	2021	2020
Revenue	$ 4,528	$ 3,239
Net income	$ 661	$ 351

The unaudited pro forma financial information is presented for information purposes only and is not indicative of the results of operations that would have been achieved had the acquisition been completed at the beginning of our fiscal year 2020. In addition, the unaudited pro forma financial information is not a projection of future results of operations of the combined company nor does it reflect the expected realization of any synergies or cost savings associated with the acquisition. The unaudited pro forma financial information includes adjustments to reflect the elimination of intercompany transactions, incremental amortization and depreciation expense of the identifiable intangible assets and property and equipment acquired, respectively, the additional interest expense associated with the issuance of debt to finance the acquisition, and share-based compensation expense.

Prior to the acquisition, we were required to make monthly cash payments to GRAIL of $35 million (the Continuation Payments) through the earlier of the consummation of the acquisition or termination of the GRAIL Merger Agreement, subject to certain exceptions. We made Continuation Payments to GRAIL totaling $245 million and $35 million in 2021 and 2020, respectively, which were recorded as selling, general and administrative expense. Subsequent to the acquisition, we did not make any additional Continuation Payments.

Goodwill

In millions	Goodwill
Balance as of January 3, 2021	$ 897
Acquisitions	6,201
Measurement period adjustments	15
Balance as of January 2, 2022	**7,113**
Impairment	**(3,914)**
Acquisition	**45**
Measurement period adjustments	**(5)**
Balance as of January 1, 2023	**$ 3,239**

Impairment of Goodwill

We test goodwill for impairment annually, as of May, or more frequently if events or circumstances indicate it is more likely than not that the fair value of a reporting unit is less than its carrying amount. We performed our annual impairment test in Q2 2022, as of May 2022. We performed a qualitative assessment for the Core Illumina reporting unit, noting no impairment. For the GRAIL reporting unit, we performed a quantitative assessment and determined a fair value for the reporting unit using a discounted cash flow model, which included assumptions for projected cash flows and a discount rate of 16.0%. The selected discount rate was determined using a weighted average cost of capital for risk factors specific to GRAIL and other market and industry data. The estimates and assumptions used represent a Level 3 measurement because they are supported by little or no market activity and reflect our own assumptions in measuring fair value. Based on the quantitative test performed, the fair value of the GRAIL reporting unit exceeded its carrying value by $700 million and no goodwill impairment was recorded in Q2 2022.

On July 13, 2022, the EU General Court ruled that the European Commission has jurisdiction under the EU Merger Regulation to review our acquisition of GRAIL. Additionally, on September 6, 2022, the European Commission issued its decision prohibiting the acquisition. Refer to note "8. Legal Proceedings" for additional details. These decisions, along with a continued and significant decrease in the Company's stock price and market capitalization, led us to believe that a triggering event occurred and that an interim goodwill and intangible asset impairment test was required in Q3 2022.

Based on our interim analysis, we concluded that our GRAIL reporting unit's carrying value exceeded its estimated fair value. As a result, we recorded $3,914 million of goodwill impairment related to our GRAIL reporting unit in Q3 2022, primarily due to the negative impact of current capital market conditions and a higher discount rate selected for the fair value calculation of the GRAIL reporting unit. No impairment was recorded for our Core Illumina reporting unit, noting its fair value exceeded its carrying value by more than $30 billion.

We performed our interim goodwill impairment test using a combination of both an income and a market approach to determine the fair value of each reporting unit. The income approach utilized the estimated discounted cash flows for each reporting unit while the market approach utilized comparable company information. Estimates and assumptions used in the income approach included projected cash flows for both the GRAIL and Core Illumina reporting units and a discount rate for each reporting unit. Discount rates were determined using a weighted average cost of capital for risk factors specific to each reporting unit and other market and industry data. For the GRAIL reporting unit, the discount rate selected was 22.0%. The estimates and assumptions used in our assessment represent a Level 3 measurement because they are supported by little or no market activity and reflect our own assumptions in measuring fair value. The assumptions used in our impairment analysis are inherently subject to uncertainty and we note that small changes in these assumptions could have a significant impact on the concluded value. In order to further validate the reasonableness of the fair values concluded for our reporting units, a reconciliation to market capitalization was performed by estimating a reasonable implied control premium and other market factors.

As a result of the impairment taken in Q3 2022, the carrying value of our GRAIL reporting unit now approximates its fair value. As such, changes in our future operating results, cash flows, share price, market capitalization or discount rates, as well as future regulatory decisions related to our acquisition of GRAIL, used when conducting future goodwill impairment tests could affect the estimated fair values of our reporting units and may result in additional goodwill impairment charges in the future. We will continue to monitor events occurring or circumstances changing which may suggest that goodwill should be reevaluated during interim periods prior to the annual impairment test. No triggering events were identified in Q4 2022 that would indicate the need for an additional interim goodwill and intangible asset impairment test. As of January 1, 2023, remaining goodwill allocated to the GRAIL reporting unit was $2,178 million.

In conjunction with the interim goodwill impairment test in Q3 2022, we also evaluated the IPR&D intangible asset, assigned to the GRAIL reporting unit, for potential impairment. We performed our interim impairment test by comparing the carrying value of the IPR&D intangible asset to its estimated fair value, which was determined by the income approach, using a discounted cash flow model. Estimates and assumptions used in the income approach included projected cash flows and a discount rate. These estimates and assumptions represent a Level 3 measurement because they are supported by little or no market activity and reflect our own assumptions in measuring fair value. Based on our interim impairment test, the carrying value of the IPR&D intangible asset did not exceed its estimated fair value. As a result, no impairment for the IPR&D intangible asset was recorded.

We also performed a recoverability test for the definite-lived intangible assets assigned to the GRAIL reporting unit, which includes developed technology and trade name, noting no impairment. Additionally, no impairment was noted for the definite-lived intangible assets assigned to our Core Illumina reporting unit.

Intangible Assets

	January 1, 2023			January 2, 2022		
In millions	**Gross Carrying Amount**	**Accumulated Amortization**	**Intangible Assets, Net**	**Gross Carrying Amount**	**Accumulated Amortization**	**Intangible Assets, Net**
Developed technologies	**$ 2,812**	**$ (449)**	**$ 2,363**	$ 2,790	$ (291)	$ 2,499
Licensed technologies	**274**	**(105)**	**169**	95	(92)	3
Trade name	**44**	**(10)**	**34**	44	(6)	38
Customer relationships	**31**	**(29)**	**2**	31	(28)	3
License agreements	**15**	**(14)**	**1**	14	(12)	2
Database	**12**	**(1)**	**11**	—	—	—
Total finite-lived intangible assets, net	**3,188**	**(608)**	**2,580**	2,974	(429)	2,545
In-process research and development (IPR&D)	**705**	**—**	**705**	705	—	705
Total intangible assets, net	**$ 3,893**	**$ (608)**	**$ 3,285**	$ 3,679	$ (429)	$ 3,250

As a result of an acquisition in Q2 2022, we recorded a developed technology intangible asset of $23 million, with a useful life of 7 years, and a database intangible asset of $12 million, with a useful life of 7 years. We are still finalizing the allocation of the purchase price as additional information is received to complete our analysis. We expect to finalize the valuation as soon as practicable, but no later than one year after the acquisition date. In addition, we recorded a licensed technology intangible asset of $180 million, with a useful life of 6.5 years, as a result of our litigation settlement with BGI in Q3 2022. Refer to note “8. Legal Proceedings” for additional details.

As a result of an acquisition completed in Q2 2021, we recorded an IPR&D intangible asset of $35 million, with an indefinite useful life. As of January 1, 2023, the research and development project had not been completed or abandoned and, therefore, the IPR&D intangible asset is not currently subject to amortization. Additionally, as a result of another acquisition completed in Q3 2021, we recorded a developed technology intangible asset of $28 million, with a useful life of 10 years.

The estimated future annual amortization of finite-lived intangible assets is shown in the following table. Actual amortization expense to be reported in future periods could differ from these estimates as a result of acquisitions, divestitures, and asset impairments, among other factors.

In millions	Estimated Annual Amortization
2023	$ 197
2024	195
2025	194
2026	183
2027	181
Thereafter	1,630
Total	$ 2,580

5. DEBT AND OTHER COMMITMENTS

Summary of Term Debt Obligations

In millions	January 1, 2023	January 2, 2022
Principal amount of 2031 Term Notes outstanding	**$ 500**	$ 500
Principal amount of 2023 Term Notes outstanding	**500**	500
Principal amount of 2027 Term Notes outstanding	**500**	
Principal amount of 2025 Term Notes outstanding	**500**	
Unamortized discounts and debt issuance costs	**(13)**	(7)
Net carrying amount of term notes	**1,987**	993
Less: current portion	**(500)**	—
Term notes, non-current	**$ 1,487**	$ 993
Fair value of term notes outstanding (Level 2)	**$ 1,913**	$ 996

Interest expense recognized on the Term Notes, which included amortization of debt discounts and issuance costs, was $21 million and $14 million in 2022 and 2021, respectively.

0.550% Term Notes due 2023 (2023 Term Notes) and 2.550% Term Notes due 2031 (2031 Term Notes)

On March 23, 2021, we issued $500 million aggregate principal amount of term notes due 2023 (2023 Term Notes) and $500 million aggregate principal amount of term notes due 2031 (2031 Term Notes). We received net proceeds from the issuance of $992 million, after deducting discounts and debt issuance costs. The 2023 and 2031 Term Notes accrue interest at a rate of 0.550% and 2.550% per annum, respectively, payable semi-annually. Interest is payable on March 23 and September 23 of each year, beginning on September 23, 2021. The 2023 Term Notes mature on March 23, 2023 and the 2031 Term Notes mature on March 23, 2031.

We may redeem for cash all or any portion of the 2023 or 2031 Term Notes, at our option, at any time prior to maturity. The 2023 Term Notes and, prior to December 23, 2030, the 2031 Term Notes are redeemable at make-whole premium redemption prices as defined in the applicable forms of note. After December 23, 2030, the 2031 Term Notes are redeemable at a redemption price equal to 100% of the principal amount of the notes to be redeemed, plus any accrued and unpaid interest up to, but excluding, the redemption date.

5.800% Term Notes due 2025 (2025 Term Notes) and 5.750% Term Notes due 2027 (2027 Term Notes)

On December 13, 2022, we issued $500 million aggregate principal amount of term notes due 2025 (2025 Term Notes) and $500 million aggregate principal amount of term notes due 2027 (2027 Term Notes). We received net proceeds from the issuance of $991 million, after deducting discounts and debt issuance costs. The 2025 and 2027 Term Notes accrue interest at a rate of 5.800% and 5.750% per annum, respectively, payable semi-annually. Interest for the 2025 Term Notes is payable on June 12 and December 12 of each year, beginning on June 12, 2023. Interest for the 2027 Term Notes is payable on June 13 and December 13 of each year, beginning on June 13, 2023. The 2025 Term Notes mature on December 12, 2025 and the 2027 Term Notes mature on December 13, 2027.

We may redeem for cash all or any portion of the 2025 or 2027 Term Notes, at our option, at any time prior to maturity. Prior to November 12, 2025 for the 2025 Term Notes, and prior to November 13, 2027 for the 2027 Term Notes, the notes are redeemable at make-whole premium redemption prices as defined in the applicable forms of note. After November 12, 2025 for the 2025 Term Notes and after November 13, 2027 for the 2027 Term Notes, the notes are redeemable at a redemption price equal to 100% of the principal amount of the notes to be redeemed, plus any accrued and unpaid interest up to, but excluding, the redemption date.

0% Convertible Senior Notes due 2023 (2023 Convertible Notes)

In millions	January 1, 2023	January 2, 2022
Principal amount outstanding	**$ 750**	$ 750
Unamortized debt discount and issuance costs	**(2)**	(48)
Net carrying amount of liability component	**748**	702
Less: current portion	**(748)**	—
Convertible senior notes, non-current	**$ —**	$ 702
Carrying value of equity component, net of debt issuance costs	**$ —**	$ 126
Fair value of convertible senior notes outstanding (Level 2)	**$ 726**	$ 854

In August 2018, we issued $750 million aggregate principal amount of convertible senior notes due 2023 (2023 Convertible Notes). The net proceeds from the issuance, after deducting the offering expenses payable by us, were $735 million. The 2023 Convertible Notes carry no coupon interest and mature on August 15, 2023.

The 2023 Convertible Notes will be convertible into cash, shares of our common stock or a combination of cash and shares of our common stock, at our election, based on an initial conversion rate, subject to adjustment, of 2.1845 shares of common stock per $1,000 principal amount of notes (which represents an initial conversion price of approximately $457.77 per share of common stock), only in the following circumstances: (1) during any calendar quarter commencing after the calendar quarter ending on September 30, 2018 (and only during such calendar quarter), if the last reported sale price of our common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price in effect on each applicable trading day; (2) during the five business day period after any 10 consecutive trading day period (the “measurement period”) in which the trading price per $1,000 principal amount of 2023 Convertible Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of our common stock and the conversion rate on each such trading day; (3) if we call any or all of the notes for redemption, at any time prior to the close of business on the scheduled trading day immediately preceding the redemption date; or (4) upon the occurrence of specified corporate events described in the indenture. Regardless of the foregoing circumstances, the holders may convert their notes on or after May 15, 2023 until August 11, 2023. The 2023 Convertible Notes were not convertible as of January 1, 2023.

It is our intent and policy to settle conversions through combination settlement; this involves repayment of an amount of cash equal to the “principal amount” and delivery of the “share amount” in excess of the conversion value over the principal amount in shares of common stock. In general, for each $1,000 in principal, the “principal amount” of cash upon settlement is defined as the lesser of $1,000 and the conversion value during the 20-day observation period. The conversion value is the sum of the daily conversion value, which is the product of the effective conversion rate divided by 20 days and the daily volume weighted average price (VWAP) of our common stock. The “share amount” is

the cumulative “daily share amount” during the observation period, which is calculated by dividing the daily VWAP into the difference between the daily conversion value (i.e., conversion rate x daily VWAP) and $1,000.

We may redeem for cash all or any portion of the 2023 Convertible Notes, at our option, on or after August 20, 2021 if the last reported sale price of our common stock has been at least 130% of the conversion price then in effect (currently $595.10) for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period (including the last trading day of such period) ending on, and including, the trading day immediately preceding the date on which we provide notice of redemption at a redemption price equal to 100% of the principal amount of the notes to be redeemed, plus any accrued and unpaid special interest to, but excluding, the redemption date.

The 2023 Convertible Notes were initially accounted for in accordance with authoritative guidance for convertible debt instruments that may be settled in cash upon conversion. The guidance required the carrying amount of the liability component to be estimated by estimating the fair value of a similar liability that does not have an associated conversion feature. Because at issuance we had no outstanding non-convertible public debt, we determined that market-traded senior, unsecured corporate bonds represented a similar liability without a conversion option. Based on market data available for publicly traded, senior, unsecured corporate bonds issued by companies in our industry, and with similar maturities to the 2023 Convertible Notes, we estimated an implied interest rate of 3.7%, assuming no conversion option. Assumptions used in the estimate represented what market participants would use in pricing the liability component, including market interest rates, credit standing, and yield curves, all of which are defined as Level 2 observable inputs. The estimated implied interest rate was applied to the 2023 Convertible Notes, which resulted in a fair value of the liability component in aggregate of $624 million upon issuance, calculated as the present value of implied future payments based on the $750 million aggregate principal amount. The $126 million difference ($93 million, net of tax) between the aggregate principal amount of $750 million and the estimated fair value of the liability component was recorded in additional paid-in capital as the 2023 Convertible Notes were not considered redeemable. As a policy election under applicable guidance related to the calculation of diluted earnings (loss) per share, we had elected the combination settlement method as our stated settlement policy and applied the treasury stock method in the calculation of the potential dilutive impact of the 2023 Convertible Notes on earnings (loss) per share each period.

As of January 3, 2022, we adopted ASU 2020-06, which removed the requirement to separate the embedded conversion feature from the notes and requires the notes to be accounted for as a single liability measured at amortized cost. Accordingly, we reclassified the unamortized debt discount from additional paid-in capital to convertible senior notes in the consolidated balance sheets on January 3, 2022. This resulted in an increase to our convertible senior notes and retained earnings of $43 million and $61 million, respectively, and a decrease to our deferred tax liabilities, included in other long-term liabilities, and additional paid-in capital of $11 million and $93 million, respectively.

Interest expense recognized on the 2023 Convertible Notes, which included amortization of debt issuance costs, was $3 million in 2022. Interest expense recognized on the 2023 Convertible Notes in 2021 and 2020 was $29 million and $28 million, respectively, which included amortization of the original debt discount and debt issuance costs.

0.5% Convertible Senior Notes due 2021 (2021 Convertible Notes)

In June 2014, we issued $517 million aggregate principal amount of convertible senior notes due 2021 (2021 Convertible Notes). The 2021 Convertible Notes were convertible into cash, shares of common stock, or a combination of cash and shares of common stock, at our election, based on conversion rates as defined in the indenture. The 2021 Convertible Notes matured on June 15, 2021, by which time the principal had been converted and was repaid in cash. The excess of the conversion value over the principal amount was paid in shares of common stock. Interest expense recognized on the 2021 Convertible Notes, which included amortization of debt discount and issuance costs, was $7 million and $18 million in 2021 and 2020, respectively. Our adoption of ASU 2020-06 on January 3, 2022 did not impact the accounting for the 2021 Convertible Notes since they were converted and repaid prior to the date of adoption.

The following table summarizes information about the conversions during 2021:

In millions	2021 Notes
Cash paid for principal of notes converted	$ 517
Conversion value over principal amount, paid in shares of common stock	$ 313
Number of shares of common stock issued upon conversion	0.7
Loss on extinguishment of debt	$ 1

Credit Agreement

On March 8, 2021, we entered into a credit agreement (the Credit Agreement), which provides us with a $750 million senior unsecured five-year revolving credit facility, including a $40 million sublimit for swingline borrowings and a $50 million sublimit for letters of credit (the Credit Facility). The proceeds of the loans under the Credit Facility may be used to finance working capital needs and for general corporate purposes.

Any loans under the Credit Facility will have a variable interest rate based on either the eurocurrency rate or the alternate base rate, plus an applicable spread that varies with the Company's debt rating. The Credit Agreement includes an option for us to elect to increase the commitments under the Credit Facility or to enter into one or more tranches of term loans in the aggregate principal amount of up to $250 million, subject to the consent of the lenders providing the additional commitments or term loans, as applicable, and certain other conditions.

The Credit Agreement contains financial and operating covenants. Pursuant to the Credit Agreement, we are required to maintain a ratio of total debt to annual earnings before interest, taxes, depreciation and amortization (EBITDA), calculated based on the four consecutive fiscal quarters ending with the most recent fiscal quarter, of not greater than 3.50 to 1.00 as of the end of each fiscal quarter. Upon the consummation of any Qualified Acquisition (as defined in the Credit Agreement) and us providing notice to the Administrative Agent, the ratio increases to 4.00 to 1.00 for the fiscal quarter in which the acquisition is consummated and the three consecutive fiscal quarters thereafter. The operating covenants include, among other things, limitations on (i) the incurrence of indebtedness by our subsidiaries, (ii) liens on our and our subsidiaries assets, and (iii) certain fundamental changes and the disposition of assets by us and our subsidiaries. The Credit Agreement contains other customary covenants, representations and warranties, and events of default.

The Credit Facility matures, and all amounts outstanding thereunder become due and payable in full, on March 8, 2026, subject to two one-year extensions at our option, the consent of the extending lenders and certain other conditions. We may prepay amounts borrowed and terminate commitments under the Credit Facility at any time without premium or penalty.

As of January 1, 2023, there were no borrowings outstanding under the Credit Facility, and we were in compliance with all financial and operating covenants.

On January 4, 2023, we terminated the Credit Agreement dated as of March 8, 2021 and the commitments thereunder, and we entered into a new credit agreement which provides us with a $750 million senior unsecured five-year revolving credit facility, including a $40 million sublimit for swingline borrowings and a $50 million sublimit for letters of credit (the New Credit Facility). The New Credit Facility matures, and all amounts outstanding thereunder become due and payable in full, on January 4, 2028, subject to two one-year extensions at our option, the consent of the extending lenders, and certain other conditions. The proceeds of the loans under the New Credit Facility may be used to finance working capital needs and for general corporate purposes.

Leases

As of January 1, 2023, the maturities of our operating lease liabilities were as follows:

In millions	
2023	$ 98
2024	117
2025	109
2026	108
2027	100
Thereafter	471
Total remaining lease payments [1]	1,003
Less: imputed interest	(183)
Total operating lease liabilities	820
Less: current portion	(76)
Long-term operating lease liabilities	$ 744
Weighted-average remaining lease term	9.5 years
Weighted-average discount rate	4.1 %

[1] Tota rema n ng ease payments exc ude $60 m on of ega y b nd ng m n mum ease payments for eases s gned but not yet commenced.

The components of our lease costs were as follows:

In millions	2022	2021	2020
Operating lease costs	**$ 112**	$ 99	$ 84
Sublease income	**(20)**	(16)	(11)
Total lease costs	**$ 92**	$ 83	$ 73

Purchase Obligations

In the normal course of business, we enter into agreements to purchase goods or services that are not cancelable without penalty, primarily related to licensing and supply arrangements. For those agreements with variable terms, we do not estimate the total obligation beyond any minimum quantities or pricing as of the reporting date. Licensing agreements under which we commit to minimum royalty payments, some of which are subject to adjustment, may be terminated prior to the expiration of underlying intellectual property under certain circumstances. Annual minimum payments for noncancelable purchase obligations as of January 1, 2023 totaled $139 million, less than half of which are due within the next twelve months.

6. STOCKHOLDERS' EQUITY

The 2015 Stock and Incentive Compensation Plan (the 2015 Stock Plan) and the New Hire Stock and Incentive Plan allow for the issuance of stock options, performance stock options, restricted stock units and awards, and performance stock units. As of January 1, 2023, approximately 1.7 million shares remained available for future grants under the 2015 Stock Plan. There is no set number of shares reserved for issuance under the New Hire Stock and Incentive Plan.

Restricted Stock

We issue restricted stock units (RSU) and performance stock units (PSU), both of which are considered restricted stock. We grant restricted stock pursuant to the 2015 Stock Plan and satisfy such grants through the issuance of new shares. RSU are share awards that, upon vesting, will deliver to the holder shares of our common stock. RSU generally vest over a four-year period with equal vesting annually. We issue PSU for which the number of shares issuable at the end of a three-year performance period is based on our performance relative to specified earnings per share targets and continued employment through the vesting period.

Restricted stock activity was as follows:

Units in thousands	Restricted Stock Units (RSU) [1]	Performance Stock Units (PSU)[2]	Weighted-Average Grant-Date Fair Value per Share	
			RSU	PSU
Outstanding at December 29, 2019	1,700	271	$ 271.49	$ 258.66
Awarded	878	(78)	$ 329.83	$ 344.22
Vested	(655)	(117)	$ 239.19	$ 400.74
Cancelled	(202)	(76)	$ 273.13	$ 266.63
Outstanding at January 3, 2021	1,721	—	$ 313.35	$ —
Awarded	259	456	$ 438.46	$ 471.63
Vested	(606)	(72)	$ 303.08	$ 492.55
Cancelled	(244)	(56)	$ 321.93	$ 475.38
Outstanding at January 2, 2022	**1,130**	**328**	**$ 345.66**	**$ 466.42**
Awarded	**1,370**	**(108)**	**$ 302.52**	**$ 479.85**
Vested	**(707)**	**(99)**	**$ 341.56**	**$ 492.55**
Cancelled	**(182)**	**(47)**	**$ 341.14**	**$ 411.78**
Outstanding at January 1, 2023	**1,611**	**74**	**$ 311.23**	**$ 446.74**

(1) In connection with the GRAIL acquisition, replacement awards of 59,000 RSU were awarded to GRAIL employees in 2021.

(2) The number of units reflect the estimated number of shares to be issued at the end of the performance period. Awarded units are presented net of performance adjustments.

Pre-tax intrinsic value and fair value of vested restricted stock was as follows:

In millions	2022	2021	2020
Pre-tax intrinsic value of outstanding restricted stock:			
RSU	**$ 326**	$ 430	$ 637
PSU	**$ 15**	$ 125	$ —
Fair value of restricted stock vested:			
RSU	**$ 162**	$ 247	$ 206
PSU	**$ 49**	$ 35	$ 47

Stock Options

Stock option activity was as follows:

Units in thousands	Options	Weighted-Average Exercise Price	Performance Stock Options[1]	Weighted-Average Exercise Price
Outstanding at December 29, 2019	58	$ 56.65	—	$ —
Exercised	(48)	$ 56.16	—	$ —
Outstanding at January 3, 2021	10	$ 59.11	—	$ —
Granted	—	$ —	48	$ 86.73
Exercised	(2)	$ 20.06	(21)	$ 86.72
Cancelled	—	$ —	(10)	$ 89.63
Outstanding at January 2, 2022	**8**	**$ 66.42**	**17**	**$ 85.54**
Granted	**180**	**$ 330.25**	**—**	**$ —**
Exercised	**(1)**	**$ 6.55**	**—**	**$ —**
Outstanding at January 1, 2023	**187**	**$ 319.72**	**17**	**$ 85.54**
Exercisable at January 1, 2023	**8**	**$ 71.09**	**—**	**$ —**

(1) In connect on w th the GRAIL acqu s t on, we ssued rep acement performance stock opt ons to GRAIL emp oyees n 2021. The number of un ts ref ect awards that have been granted and for wh ch t s assumed to be probab e that the under y ng performance goa s w be ach eved.

The aggregate intrinsic value of options outstanding as of January 1, 2023 was $38 million. Aggregate intrinsic value represents the product of the number of options outstanding multiplied by the difference between our closing stock price per share on the last trading day of the fiscal period, which was $202.20 as of December 30, 2022, and the exercise price. Total intrinsic value of options exercised was zero, $1 million, and $14 million in 2022, 2021, and 2020, respectively. The weighted-average remaining life of options outstanding was 5.9 years as of January 1, 2023.

The aggregate intrinsic value of performance stock options outstanding as of January 1, 2023 was $3 million. The total intrinsic value of performance stock options exercised was $6 million in 2021. Outstanding performance stock options, in general, have contractual terms of ten years from the respective grant dates.

Liability-Classified Awards

During 2022 and 2021, we granted GRAIL employees cash-based equity incentive awards. For purposes of valuation and performance measurement of the awards, GRAIL's stand-alone valuation, as determined by GRAIL using a reasonable calculation and based on advice from independent valuation experts and analyses, is used. The awards generally have terms of four years and vest in four equal installments on each anniversary of the grant date, subject to continued employment through the vesting period. These awards are accounted for as liability-classified awards.

Cash-based equity incentive award activity was as follows:

In millions	
Outstanding at January 3, 2021	$ —
Granted	218
Cancelled	(42)
Change in fair value	8
Outstanding at January 2, 2022	**184**
Granted	**168**
Vested and paid in cash	**(41)**
Cancelled	**(41)**
Change in fair value	**23**
Outstanding at January 1, 2023	**$ 293**
Estimated liability as of January 1, 2023 (included in accrued liabilities)	**$ 36**

We recognized share-based compensation expense of $67 million and $11 million in 2022 and 2021, respectively. As of January 1, 2023, approximately $257 million of total unrecognized compensation cost related to awards issued to date was expected to be recognized over a weighted-average period of approximately 3.1 years.

In connection with the acquisition of GRAIL, we assumed a performance-based award for which vesting is based on GRAIL's future revenues. The award has an aggregate potential value of up to $78 million and expires, to the extent unvested, in August 2030. As of January 1, 2023, it was not probable that the performance conditions associated with the award will be achieved and, therefore, no share-based compensation expense, or corresponding liability, has been recognized in the consolidated financial statements to-date. We assess the probability of achieving the performance conditions associated with the award on a quarterly basis at each reporting period.

Employee Stock Purchase Plan

A total of 15.5 million shares of our common stock have been reserved for issuance under our 2000 Employee Stock Purchase Plan, or ESPP. The ESPP permits eligible employees to purchase common stock at a discount through payroll deductions during defined offering periods. The price at which stock is purchased under the ESPP is equal to 85% of the fair market value of the common stock on the first day of the offering period or purchase date, whichever is lower. The initial offering period commenced in July 2000.

Approximately 0.3 million shares during 2022 and approximately 0.2 million shares during each of the years 2021 and 2020 were issued under the ESPP. As of January 1, 2023 and January 2, 2022, there were approximately 12.8 million and 13.1 million shares available for issuance under the ESPP, respectively.

Share Repurchases

We did not repurchase any shares during 2022 or 2021. During 2020, we repurchased approximately 2.3 million shares for $735 million. As of January 1, 2023, authorizations to repurchase approximately $15 million of our common stock remained available under the $750 million share repurchase program authorized by our Board of Directors on February 5, 2020. The repurchases may be completed under a 10b5-1 plan or at management's discretion.

Share-Based Compensation

Share-based compensation expense, which includes expense for both equity and liability-classified awards, reported in our consolidated statements of operations was as follows:

In millions	2022	2021	2020
Cost of product revenue	**$ 26**	$ 23	$ 21
Cost of service and other revenue	**6**	4	4
Research and development	**153**	276	74
Selling, general and administrative	**181**	638	95
Share-based compensation expense, before taxes	**366**	941	194
Related income tax benefits	**(83)**	(64)	(43)
Share-based compensation expense, net of taxes	**$ 283**	$ 877	$ 151

In connection with the acquisition of GRAIL, we recognized share-based compensation expense of $615 million in 2021 related to the fair value of accelerated equity awards attributable to the post-combination period, of which $167 million was recorded in research and development expense and $448 million in selling, general and administrative expense. We also recognized $10 million and $24 million of expense in 2022 and 2021, respectively, related to the replacement awards.

In February 2021, we modified the metrics and reduced the maximum potential payouts for our performance stock units granted in 2019 and 2020, which vested at the end of the three-year periods ended January 2, 2022 and January 1, 2023, respectively. The modifications affected 52 employees with units granted in 2019, which resulted in total incremental share-based compensation cost of approximately $41 million, and 72 employees with units granted in 2020, which resulted in total incremental share-based compensation cost of approximately $65 million.

Additionally, in August 2020, we modified the performance period for our performance stock units granted in 2018, which vested at the end of the three-year period ended January 3, 2021. This modification affected 49 employees and resulted in total incremental share-based compensation cost of approximately $47 million in 2020.

The assumptions used for the specified reporting periods and the resulting estimates of weighted-average fair value per share for stock purchased under the ESPP were as follows:

	2022	2021	2020
Risk-free interest rate	**0.06% - 2.98%**	0.06% - 0.12%	0.11% - 2.04%
Expected volatility	**37% - 51%**	37% - 47%	30% - 45%
Expected term	**0.5 - 1.0 year**	0.5 - 1.0 year	0.5 - 1.0 year
Expected dividends	**0%**	0%	0%
Weighted-average grant-date fair value per share	**$ 50.22**	$ 134.47	$ 75.57

As of January 1, 2023, approximately $486 million of total unrecognized compensation cost related to restricted stock, stock options and ESPP shares issued to date was expected to be recognized over a weighted-average period of approximately 2.4 years.

7. SUPPLEMENTAL BALANCE SHEET AND STATEMENT OF OPERATIONS DETAILS

Accounts Receivable

In millions	January 1, 2023	January 2, 2022
Trade accounts receivable, gross	**$ 675**	$ 651
Allowance for credit losses	**(4)**	(3)
Total accounts receivable, net	**$ 671**	$ 648

Inventory

In millions	January 1, 2023	January 2, 2022
Raw materials	**$ 247**	$ 144
Work in process	**386**	333
Finished goods	**28**	32
Inventory, gross	**661**	509
Inventory reserve	**(93)**	(78)
Total inventory, net	**$ 568**	$ 431

Property and Equipment

In millions	January 1, 2023	January 2, 2022
Leasehold improvements	**$ 759**	$ 724
Machinery and equipment	**644**	513
Computer hardware and software	**424**	377
Furniture and fixtures	**50**	49
Buildings	**44**	44
Construction in progress	**132**	113
Total property and equipment, gross	**2,053**	1,820
Accumulated depreciation	**(962)**	(796)
Total property and equipment, net	**$ 1,091**	$ 1,024

Property and equipment, net included non-cash expenditures of $16 million, $17 million and $22 million in 2022, 2021, and 2020, respectively, which were excluded from the consolidated statements of cash flows.

Accrued Liabilities

In millions	January 1, 2023	January 2, 2022
Legal contingencies[1]	**$ 473**	$ —
Contract liabilities, current portion	**245**	234
Accrued compensation expenses	**188**	241
Accrued taxes payable	**97**	98
Operating lease liabilities, current portion	**76**	71
Liability-classified equity incentive awards	**36**	11
Other, including warranties[2]	**117**	106
Total accrued liabilities	**$ 1,232**	$ 761

(1) See note "8. Lega Proceed ngs" for add t ona deta s.
(2) See tab e be ow for changes n the reserve for product warrant es.

Changes in the reserve for product warranties were as follows:

In millions	
Balance as of December 29, 2019	$ 14
Additions charged to cost of product revenue	20
Repairs and replacements	(21)
Balance as of January 3, 2021	13
Additions charged to cost of product revenue	33
Repairs and replacements	(24)
Balance as of January 2, 2022	**22**
Additions charged to cost of product revenue	**23**
Repairs and replacements	**(27)**
Balance as of January 1, 2023	**$ 18**

Other (Expense) Income, Net

In millions	2022	2021	2020
Gain on previously held investment in GRAIL	**$ —**	$ 899	$ —
Gain on exchange of GRAIL contingent value rights	**—**	86	—
(Loss) gain on Helix contingent value right	**(7)**	30	7
Gain (loss) on derivative assets related to terminated acquisition	**—**	26	(25)
(Losses) gains on strategic investments, net	**(122)**	18	291
Other	**(13)**	9	11
Other (expense) income, net	**$ (142)**	$ 1,068	$ 284

8. LEGAL PROCEEDINGS

We are involved in various lawsuits and claims arising in the ordinary course of business, including actions with respect to intellectual property, employment, and contractual matters. In connection with these matters, we assess, on a regular basis, the probability and range of possible loss based on the developments in these matters. A liability is recorded in the consolidated financial statements if it is believed to be probable that a loss has been incurred and the amount of the loss can be reasonably estimated. Because litigation is inherently unpredictable and unfavorable resolutions could occur, assessing contingencies is highly subjective and requires judgments about future events. We regularly review outstanding legal matters to determine the adequacy of the liabilities accrued and related disclosures in consideration of many factors, which include, but are not limited to, past history, scientific and other evidence, and the specifics and status of each matter. We may change our estimates if our assessment of the various factors changes and the amount of ultimate loss may differ from our estimates, resulting in a material effect on our business, financial condition, results of operations, and/or cash flows.

Acquisition of GRAIL

On March 30, 2021, the U.S. Federal Trade Commission (the FTC) filed an administrative complaint and a motion for a preliminary injunction in the United States District Court for the District of Columbia. In both actions, the FTC alleged that our acquisition of GRAIL would violate Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18. We filed an answer to the FTC's complaint in federal district court on April 6, 2021, and in the administrative court on April 13, 2021. On April 20, 2021, the United States District Court for the District of Columbia granted our motion to transfer venue to the United States District Court for the Southern District of California. On May 28, 2021, the district court granted the FTC's motion to dismiss the complaint without prejudice. The administrative trial commenced on August 24, 2021. On September 1, 2022, the administrative law judge (the ALJ) ruled in favor of Illumina and found that the acquisition of GRAIL did not violate Section 7 of the Clayton Act. In the decision, the ALJ found that the FTC's complaint counsel had failed to prove its prima facie case that Illumina's acquisition of GRAIL would result in harm to competition in a putative market for multi-cancer early detection (MCED) tests. The FTC's complaint counsel appealed the ALJ's decision to the full FTC on September 2, 2022. The appeal was fully briefed as of November 10, 2022 and oral argument occurred on December 13, 2022. A decision from the full FTC is pending. We intend to continue to vigorously defend against the FTC action.

On April 19, 2021, the European Commission accepted a request for a referral of the GRAIL acquisition for European Union merger review, submitted by a Member State of the European Union (France), and joined by several other Member States (Belgium, Greece, Iceland, the Netherlands and Norway), under Article 22(1) of Council Regulation (EC) No 139/2004 (the EU Merger Regulation). On April 29, 2021, we filed an action in the General Court of the European Union (the EU General Court) asking for annulment of the European Commission's assertion of jurisdiction to review the acquisition under Article 22 of the EU Merger Regulation, as the acquisition does not meet the jurisdictional criteria under the EU Merger Regulation or under the national merger control laws of any Member State of the European Union. On December 16, 2021, the EU General Court held a hearing regarding the European Commission's assertion of jurisdiction. On July 13, 2022, the EU General Court reached a decision in favor of the European Commission, holding that the European Commission has jurisdiction under the EU Merger Regulation to review the acquisition. On September 22, 2022, we filed an appeal in the Court of Justice of the European Union asking for annulment of the EU General Court's decision.

On October 29, 2021, the European Commission adopted an order imposing interim measures (the Initial Interim Measures Order). As the Initial Interim Measures Order was set to expire on November 3, 2022, the European Commission adopted a new order imposing interim measures (the New Interim Measures Order) on October 28, 2022. On December 1, 2021, we filed an action with the EU General Court asking for annulment of the Initial Interim Measures Order. The hearing of that application has been stayed pending our appeal of the judgment of the EU General Court regarding the European Commission's assertion of jurisdiction. On January 10, 2023, we filed an action with the EU General Court asking for annulment of the New Interim Measures Order.

On September 6, 2022, the European Commission announced that it had completed its Phase II review of the acquisition of GRAIL and adopted a final decision (the Prohibition Decision), which found that, in its view, our acquisition of GRAIL was incompatible with the internal market in Europe because it results in a significant impediment to effective competition. On November 17, 2022, we filed an action with the EU General Court asking for annulment of the Prohibition Decision.

On December 5, 2022, the European Commission issued a Statement of Objections informing Illumina of the order it intends to adopt requiring us (among other things) to divest GRAIL (the EC Divestment Decision). We filed our response to the Statement of Objections on January 16, 2023. Neither the Prohibition Decision nor such public statements indicate when any such EC Divestment Decision may be adopted. We intend to appeal any EC Divestment Decision (if and when adopted by the European Commission) and, if necessary, to seek interim relief suspending the divestment of GRAIL until the final determination of these appeals.

Additionally, as a result of our decision to proceed with the completion of the acquisition of GRAIL during the pendency of the European Commission's review, the European Commission will likely seek to impose a fine on us pursuant to Article 14(2)(b) of the EU Merger Regulation of up to 10% of our consolidated annual revenues in Q1 2023. On July 19, 2022, the European Commission issued a Statement of Objections alleging that we breached the EU Merger Regulation by completing our acquisition of GRAIL. As a result, we have accrued $458 million, included in accrued liabilities, as of January 1, 2023, which represents 10% of our consolidated annual revenues for fiscal year 2022 in accordance with ASC 450, *Contingencies*.

BGI Genomics Co. Ltd. and its Affiliates

As previously disclosed, we were engaged in litigation in various U.S. jurisdictions with BGI Genomics Co. Ltd (BGI) and certain of its affiliates, including Complete Genomics, Inc. (CGI) since June of 2019. On July 14, 2022, we entered into a Settlement and License Agreement with BGI and CGI (the "Agreement"). The Agreement resolves all claims in Complete Genomics, Inc. v. Illumina, Inc., Case No. C.A. No. 19-970-MN (D. Del.). The Agreement also resolves all claims in Illumina, Inc. and Illumina Cambridge Ltd. v. BGI Genomics Co., Ltd., BGI Americas Corp., MGI Tech Co., Ltd., MGI Americas Inc., and Complete Genomics, Inc., Case No. 3:19-cv-03770-WHO (N.D. Cal.) and Illumina, Inc. and Illumina Cambridge Ltd. v. BGI Genomics Co., Ltd., BGI Americas Corp., MGI Tech Co., Ltd., MGI Americas Inc., and Complete Genomics, Inc., Case No. 3:20-cv-01465-WHO (N.D. Cal.), as well as related Appeal Nos. 2022-1733, 2022-1735 and 2022-1742, 2022-1743 pending in the United States Court of Appeals for the Federal Circuit, with the exception that the permanent injunction entered on April 11, 2022 against BGI remained in effect with a revised expiration date of January 1, 2023, with respect to BGI's StandardMPS chemistry. The Agreement further resolves all antitrust claims against us in Complete Genomics, Inc., BGI Americas Corp. and MGI Americas, Inc. v. Illumina, Inc. and Illumina Cambridge Ltd., Case No. 21-cv-00217 (N.D. Cal.) and that complaint was dismissed with prejudice. Pursuant to the terms of the Agreement, the Company agreed to pay CGI a one-time payment of $325 million, with the parties agreeing that the judgment against BGI and the judgment against the Company in the above-referenced litigations are satisfied in total. In addition, the Company received from BGI a fully paid-up license to U.S. Patent Nos. 8,617,811, 9,222,132, 9,523,125, 10,662,473, 11,098,356 and 11,214,832, U.S. Patent Application Nos. 61/024,396, 61/024,110, 16/882,461, 17/407,935 and 17/523,706, and U.S. patents and patent applications related to each of the foregoing U.S. patents and patent applications until their expiration ("the 2-channel technology patents"). Our license allows the Company to use the 2-channel technology in all its current and future platforms with no additional royalties owed. BGI received from us a fully paid-up license to U.S. Patent Nos. 9,217,178, 9,303,290 and 9,970,055 ("the image mix patents") and U.S. patents and applications related to each of the foregoing U.S. patents until their expiration. The parties agreed to a litigation standstill for patent and antitrust actions in the United States and its territories until October 1, 2025, as set forth in the Agreement. The standstill does not apply to the parties' patents or patent applications related to non-invasive prenatal testing, nor to any intellectual property of Grail, LLC, related to multi-cancer early detection. None of the parties make any admission of liability in entering into the Agreement.

We allocated the $325 million payment on a relative fair value basis, resulting in $180 million capitalized as an intangible asset for the value of the license, which is amortized over a period of 6.5 years on a straight-line basis, $150 million allocated to the release of past damages claimed, and a $5 million gain for damages awarded to us. The fair value of the license was estimated using a discounted cash flow model, which included assumptions for projected revenues covered by the license, an estimated royalty rate and a discount rate. The fair value of the past damages claimed was estimated based on applicable historical revenues and an estimated royalty rate. These inputs represent a Level 3 measurement because they are supported by little or no market activity and reflect our own assumptions in measuring fair value.

RavGen

On December 3, 2020, RavGen filed a patent infringement suit against the Company claiming the Company's use of Streck, Inc. sample collection tubes in its Verifi, Verifi Plus, and VeriSeq NIPT and liquid biopsy oncology products infringe U.S. Patent Nos. 7,332,277 and 7,727,720 (RavGen, Inc. v. Illumina, Inc., United States District Court for the District of Delaware, Case No. 1:20-cv-01644-UNA). The patents-in-suit are directed to the use of a sample-stabilizing agent that inhibits the lysis of cells. RavGen is seeking, among other things, an unspecified amount of damages, an injunction, and reasonable attorneys' fees. The patents expire March 13, 2023.

On January 27, 2021, the Company filed its Answer and Counterclaims denying all allegations in the Complaint and seeking declaratory judgment of non-infringement and invalidity.

On July 20, 2021, the Company filed Petitions for Inter Partes Review (IPR) of the '277 and '720 patents-in-suit with the US Patent Trial and Appeal Board seeking to invalidate certain claims of the patents (PTAB) (IPR2021-01272 and IPR2021-01271). On January 26, 2022, the PTAB instituted the IPRs. On January 25, 2023, the PTAB issued Final Written Decisions in the IPRs that no challenged claim was unpatentable due to anticipation or obviousness.

On March 1, 2022, the District Court granted the Company's motion to stay the litigation pending resolution of the IPRs. The Company intends to vigorously defend against RavGen's claims.

In parallel, on December 15, 2020, the Company requested Streck, Inc. to indemnify the Company in the RavGen litigation. On January 6, 2021, Streck responded, denying any obligation to indemnify the Company. Streck also requested that the Company stay its indemnification request pending resolution of the underlying patent infringement suit. The Company and Streck executed a tolling agreement effective April 2, 2021, staying the Company's indemnification claim pending resolution of the underlying patent suit.

While we cannot estimate a possible loss, if any, that may result from RavGen's claims against us, as of January 1, 2023, we have accrued an estimate at the low end of a possible range of loss.

9. INCOME TAXES

(Loss) income before income taxes summarized by region was as follows:

In millions	2022	2021	2020
United States	**$ (4,942)**	$ (115)	$ 313
Foreign	**606**	999	543
Total (loss) income before income taxes	**$ (4,336)**	$ 884	$ 856

The provision for income taxes consisted of the following:

In millions	2022	2021	2020
Current:			
Federal	**$ (11)**	$ 54	$ 25
State	**27**	37	13
Foreign	**75**	107	45
Total current provision	**91**	198	83
Deferred:			
Federal	**40**	(50)	30
State	**(47)**	(23)	94
Foreign	**(16)**	(3)	(7)
Total deferred (benefit) expense	**(23)**	(76)	117
Total tax provision	**$ 68**	$ 122	$ 200

The provision for income taxes reconciles to the amount computed by applying the federal statutory rate to (loss) income before taxes as follows:

In millions	2022	2021	2020
Tax at federal statutory rate	**$ (911)**	$ 186	$ 180
State, net of federal benefit	**(9)**	13	19
Research and other credits	**(46)**	(23)	(19)
Change in valuation allowance	**62**	33	69
Impact of R&D expense capitalization	**87**	—	—
Impact of net operating losses on GILTI and foreign tax credits	**60**	—	—
Impact of foreign operations	**(81)**	(80)	(47)
Impact of foreign derived intangible income (FDII) deduction	**(1)**	(12)	(11)
Cost sharing adjustment	**(3)**	—	28
Stock compensation	**20**	(10)	(18)
Officer compensation	**4**	13	7
Accrual of potential fine	**96**	—	—
Goodwill impairment	**822**	—	—
Impact of acquisition related items	**(27)**	(16)	—
Other	**(5)**	18	(8)
Total tax provision	**$ 68**	$ 122	$ 200

We have elected to account for the global intangible low-taxed income (GILTI) as a period cost in our consolidated financial statements.

The impact of foreign operations primarily represents the difference between the actual provision for income taxes for our legal entities that operate primarily in jurisdictions that have statutory tax rates lower than the U.S. federal statutory tax rate of 21%. The most significant tax benefits from foreign operations were from our earnings in Singapore and the United Kingdom, which had statutory tax rates of 17% and 19%, respectively, in 2022. The impact of foreign operations also includes the impact of GILTI and the U.S. foreign tax credit impact of non-U.S. earnings before the tax impact of net operating losses, and uncertain tax positions related to foreign items.

The impact of R&D expense capitalization is primarily the tax impact of capitalizing research and development expenses for tax purposes beginning in 2022, in accordance with the 2017 Tax Cuts and Jobs Act, on GILTI and the utilization of the U.S. foreign tax credits.

The impact of net operating losses on GILTI and foreign tax credits is primarily the tax impact of GRAIL pre-acquisition net operating losses on GILTI and the utilization of the U.S. foreign tax credits.

The impact of acquisition related items includes the tax impact of the gain on our previously held investment in GRAIL, acquisition related compensation, continuation payments, transaction costs, and changes to the contingent value rights associated with the GRAIL acquisition.

On June 22, 2020, the Supreme Court denied petition for certiorari for Altera Corporation v. Commissioner. This effectively means the Ninth Circuit decision that stock-based compensation must be included in intercompany cost sharing is final. As a result, tax expense of $28 million was recorded in 2020. A tax benefit of $3 million was recorded in 2022 due to the reversal of tax expense recorded in prior years after closure of an audit.

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

In millions	January 1, 2023	January 2, 2022
Deferred tax assets:		
Net operating losses	**$ 408**	$ 513
Tax credits	**157**	128
Other accruals and reserves	**40**	39
Stock compensation	**20**	23
Capitalized U.S. R&D expenses	**97**	—
Other amortization	**247**	225
Operating lease liabilities	**156**	173
Investments	**5**	—
Other	**38**	36
Total gross deferred tax assets	**1,168**	1,137
Valuation allowance on deferred tax assets	**(203)**	(134)
Total deferred tax assets	**965**	1,003
Deferred tax liabilities:		
Purchased intangible amortization	**(800)**	(828)
Convertible debt	**—**	(11)
Property and equipment	**(11)**	(21)
Operating lease right-of-use assets	**(112)**	(129)
Investments	**—**	(29)
Other	**(18)**	(12)
Total deferred tax liabilities	**(941)**	(1,030)
Deferred tax assets (liabilities), net	**$ 24**	$ (27)

A valuation allowance is established when it is more likely than not the future realization of all or some of the deferred tax assets will not be achieved. The evaluation of the need for a valuation allowance is performed on a jurisdiction-by-jurisdiction basis and includes a review of all available positive and negative evidence, including operating results and forecasted ranges of future taxable income. Based on the available evidence as of January 1, 2023, we were not able to conclude it is more likely than not certain deferred tax assets will be realized. Therefore, a valuation allowance of $203 million was recorded against certain U.S. and foreign deferred tax assets, of which $7 million was recorded as an adjustment to goodwill as a result of acquisitions that occurred in 2022 and 2021.

As of January 1, 2023, we had net operating loss carryforwards for federal and state tax purposes of $1,162 million and $1,488 million, respectively, which will begin to expire in 2023 and 2029, respectively, unless utilized prior. We also had federal and state tax credit carryforwards of $65 million and $198 million, which will begin to expire in 2032 and 2027, respectively, unless utilized prior.

Pursuant to Section 382 and 383 of the Internal Revenue Code, utilization of net operating losses and credits may be subject to annual limitations in the event of any significant future changes in its ownership structure. These annual limitations may result in the expiration of net operating losses and credits prior to utilization. The deferred tax assets as of January 1, 2023 are net of any previous limitations due to Section 382 and 383.

Our manufacturing operations in Singapore operate under various tax holidays and incentives, a portion of which begin to expire in 2023. These tax holidays and incentives resulted in a $56 million, $82 million, and $30 million decrease to the provision for income taxes in 2022, 2021, and 2020, respectively. These tax holidays and incentives resulted in an increase in diluted (loss) earnings per share of $0.35, $0.55, and $0.20, in 2022, 2021, and 2020, respectively.

As of January 1, 2023, we asserted that $1,210 million of foreign earnings would not be indefinitely reinvested, and accordingly, recorded a deferred tax liability of $19 million.

The following table summarizes the gross amount of our uncertain tax positions:

In millions	January 1, 2023	January 2, 2022	January 3, 2021
Balance at beginning of year	**$ 131**	$ 80	$ 79
Increases related to prior year tax positions	**12**	19	2
Decreases related to prior year tax positions	**(3)**	(1)	—
Increases related to current year tax positions	**42**	39	12
Decreases related to lapse of statute of limitations	**(29)**	(6)	(13)
Balance at end of year	**$ 153**	$ 131	$ 80

Included in the balance of uncertain tax positions as of January 1, 2023 and January 2, 2022, was $124 million and $111 million, respectively, of net unrecognized tax benefits that, if recognized, would reduce the effective income tax rate in future periods.

Any interest and penalties related to uncertain tax positions are reflected in the provision for income taxes. We recognized income of $3 million in 2022, expense of $1 million in 2021, and income of $1 million in 2020, related to potential interest and penalties on uncertain tax positions. We recorded a liability for potential interest and penalties of $3 million and $7 million as of January 1, 2023 and January 2, 2022, respectively.

Tax years 1997 to 2021 remain subject to future examination by the major tax jurisdictions in which we are subject to tax. The Internal Revenue Service completed an examination of the U.S. Corporation Income Tax Returns for tax years 2017, 2018, and 2020. Given the uncertainty of potential adjustments from examination as well as the potential expiration of the statute of limitations, it is reasonably possible that the balance of unrecognized tax benefits could change significantly over the next 12 months. Due to the number of years remaining that are subject to examination, we are unable to estimate the full range of possible adjustments to the balance of gross unrecognized tax benefits.

10. EMPLOYEE BENEFIT PLANS

Retirement Plan

We have a 401(k) savings plan covering substantially all of our employees in the United States. Our contributions to the plan are discretionary. During 2022, 2021, and 2020, we made matching contributions of $30 million, $26 million, and $22 million, respectively.

Deferred Compensation Plan

The Illumina, Inc. Deferred Compensation Plan (the Plan) allows senior level employees to contribute up to 60% of their base salary and 100% of their variable cash compensation, and members of the board of directors to contribute up to 100% of their director fees and equity awards. Under the Plan, we credit the participants' contributions with earnings that reflect the performance of certain independent investment funds. On a discretionary basis, we may also make employer contributions to participant accounts in any amount determined by us. The vesting schedules of employer contributions are at the sole discretion of the Compensation Committee. However, all employer contributions shall become 100% vested upon the occurrence of the participant's disability, death or retirement or a change in control of Illumina. The benefits under this plan are unsecured. Participants are generally eligible to receive payment of their vested benefit at the end of their elected deferral period or after termination of their employment for any reason or at a later date to comply with the restrictions of Section 409A.

We also established a rabbi trust for the benefit of the participants under the Plan and have included the assets of the rabbi trust in the consolidated balance sheets. As of January 1, 2023 and January 2, 2022, the assets of the trust were $52 million and $60 million, respectively, and our liabilities were $51 million and $56 million, respectively. The assets and liabilities are classified as other assets and accrued liabilities, respectively, on the consolidated balance sheets. Changes in the values of the assets held by the rabbi trust are recorded in other (expense) income, net in the consolidated statements of operations, and changes in the values of the deferred compensation liabilities are recorded in cost of revenue or operating expenses.

11. SEGMENTS AND GEOGRAPHIC DATA

Reportable Segment Information

We have two reportable segments, Core Illumina and GRAIL. We do not allocate expenses between segments.

On August 18, 2021, we acquired GRAIL and it operates as a separate reportable segment. We have included the results of operations of GRAIL in our consolidated statements of operations from the date of acquisition. See note "4. Acquisitions, Goodwill and Intangible Assets" for further details. Core Illumina sells products and provides services to GRAIL, and vice versa, in accordance with contractual agreements between the entities.

***Core Illumina*:**

Core Illumina's products and services serve customers in the research, clinical and applied markets, and enable the adoption of a variety of genomic solutions. Core Illumina includes all of our operations, excluding the results of GRAIL.

***GRAIL*:**

GRAIL is a healthcare company focused on early detection of multiple cancers.

In millions	2022	2021	2020
Revenue:			
Core Illumina	**$ 4,553**	$ 4,519	$ 3,239
GRAIL	**55**	12	—
Eliminations	**(24)**	(5)	—
Consolidated revenue	**$ 4,584**	$ 4,526	$ 3,239
Depreciation and amortization:			
Core Illumina	**$ 240**	$ 200	$ 187
GRAIL	**154**	51	—
Consolidated depreciation and amortization	**$ 394**	$ 251	$ 187
Income (loss) from operations:			
Core Illumina	**$ 481**	$ 808	$ 580
GRAIL	**(4,657)**	(931)	—
Eliminations	**(3)**	—	—
Consolidated (loss) income from operations	**$ (4,179)**	$ (123)	$ 580

Total other (expense) income, net primarily relates to Core Illumina, and we do not allocate income taxes to our segments.

In millions	January 1, 2023	January 2, 2022	January 3, 2021
Total assets:			
Core Illumina	**$ 5,755**	$ 5,571	$ 7,585
GRAIL	**6,505**	9,649	—
Eliminations	**(8)**	(3)	—
Consolidated total assets	**$ 12,252**	$ 15,217	$ 7,585
Capital expenditures:			
Core Illumina	**$ 262**	$ 201	$ 189
GRAIL	**24**	8	—
Eliminations	**—**	(1)	—
Consolidated capital expenditures	**$ 286**	$ 208	$ 189

Geographic Data

Net long-lived assets, consisting of property and equipment and operating lease right-of-use assets, by region, were as follows:

In millions	January 1, 2023	January 2, 2022
United States	**$ 1,237**	$ 1,281
Singapore	**290**	218
United Kingdom	**149**	146
Other countries	**68**	51
Total net long-lived assets	**$ 1,744**	$ 1,696

Refer to note “2. Revenue” for revenue by geographic area.

CONTROLS AND PROCEDURES

We design our internal controls to provide reasonable assurance that (1) our transactions are properly authorized; (2) our assets are safeguarded against unauthorized or improper use; and (3) our transactions are properly recorded and reported in conformity with U.S. generally accepted accounting principles. We also maintain internal controls and procedures to ensure that we comply with applicable laws and our established financial policies.

During the fourth quarter of 2022, we continued to monitor and evaluate the design and operating effectiveness of key controls, including the impact of the COVID-19 pandemic on our internal control environment. There were no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act) that materially affected or are reasonably likely to materially affect internal control over financial reporting.

Our management, under the supervision and with the participation of our chief executive officer (CEO) and chief financial officer (CFO), has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (Exchange Act)), as of the end of the period covered by this Annual Report on Form 10-K. Based on such evaluation, our CEO and CFO have concluded that as of January 1, 2023, our disclosure controls and procedures are designed at a reasonable assurance level and are effective to provide reasonable assurance that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the rules and forms of the Securities and Exchange Commission (SEC), and that such information is accumulated and communicated to our management, including our CEO and CFO, as appropriate, to allow timely decisions regarding required disclosure.

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f). Because of its inherent limitations, internal control over financial reporting may not prevent or detect all misstatements. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation.

We conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Based on this evaluation, our management has concluded that our internal control over financial reporting was effective as of January 1, 2023. The effectiveness of our internal control over financial reporting as of January 1, 2023 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their report which is included herein.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

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

Opinion on Internal Control over Financial Reporting

We have audited Illumina, Inc.'s internal control over financial reporting as of January 1, 2023, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Illumina, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of January 1, 2023, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Illumina, Inc. as of January 1, 2023 and January 2, 2022, the related consolidated statements of operations, comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended January 1, 2023, and the related notes and our report dated February 17, 2023 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

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

Definition and Limitations of Internal Control Over Financial Reporting

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

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

/s/ Ernst & Young LLP

San Diego, California
February 17, 2023

DIRECTORS, EXECUTIVE OFFICERS, AND CORPORATE GOVERNANCE

Directors

Information concerning our directors is incorporated by reference from the section entitled “Proposal One: Election of Directors,” “Information About Directors,” “Director Compensation,” and “Board of Directors and Corporate Governance” to be contained in our definitive Proxy Statement with respect to our 2023 Annual Meeting of Stockholders to be filed with the SEC no later than May 1, 2023.

Executive Officers

Information concerning our executive officers is incorporated by reference from the section entitled “Executive Officers” to be contained in our definitive Proxy Statement with respect to our 2023 Annual Meeting of Stockholders to be filed with the SEC no later than May 1, 2023.

Corporate Governance

Section 16(a) of the Exchange Act

Information concerning compliance with Section 16(a) of the Securities Exchange Act of 1934 is incorporated by reference from the section entitled “Section 16(a) Beneficial Ownership Reporting Compliance” to be contained in our definitive Proxy Statement with respect to our 2023 Annual Meeting of Stockholders to be filed with the SEC no later than May 1, 2023.

Audit Committee Financial Expert

Information concerning the audit committee financial expert as defined by the SEC rules adopted pursuant to the Sarbanes-Oxley Act of 2002 is incorporated by reference from the section entitled “Board of Directors and Corporate Governance” to be contained in our definitive Proxy Statement with respect to our 2023 Annual Meeting of Stockholders to be filed with the SEC no later than May 1, 2023.

Code of Conduct

We have a code of conduct for our directors, officers, and employees, which is available on our website at www.illumina.com in the Corporate Governance portal of the Investor Information section under “Company.” A copy of the Code of Conduct is available in print free of charge to any stockholder who requests a copy. Interested parties may address a written request for a printed copy of the Code of Ethics to: Corporate Secretary, Illumina, Inc., 5200 Illumina Way, San Diego, California 92122. We intend to satisfy the disclosure requirement regarding any amendment to, or a waiver from, a provision of the Code of Ethics for our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions, by posting such information on our website. The information on, or that can be accessed from, our website is not incorporated by reference into this report.

EXECUTIVE COMPENSATION

Information concerning executive compensation is incorporated by reference from the sections entitled “Compensation Discussion and Analysis,” “Director Compensation,” and “Executive Compensation” to be contained in our definitive Proxy Statement with respect to our 2023 Annual Meeting of Stockholders to be filed with the SEC no later than May 1, 2023.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Information concerning the security ownership of certain beneficial owners and management and information covering securities authorized for issuance under equity compensation plans is incorporated by reference from the sections entitled “Stock Ownership of Principal Stockholders and Management,” “Executive Compensation,” and “Equity Compensation Plan Information” to be contained in our definitive Proxy Statement with respect to our 2023 Annual Meeting of Stockholders to be filed with the SEC no later than May 1, 2023.

CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Information concerning certain relationships and related transactions, and director independence is incorporated by reference from the sections entitled “Proposal One: Election of Directors,” “Information About Directors,” “Director Compensation,” “Executive Compensation,” and “Certain Relationships and Related Party Transactions” to be contained in our definitive Proxy Statement with respect to our 2023 Annual Meeting of Stockholders to be filed with the SEC no later than May 1, 2023.

PRINCIPAL ACCOUNTANT FEES AND SERVICES

Information concerning principal accountant fees and services is incorporated by reference from the sections entitled “Proposal Two: Ratification of Appointment of Independent Registered Public Accounting Firm” and “Independent Registered Public Accountants” to be contained in our definitive Proxy Statement with respect to our 2023 Annual Meeting of Stockholders to be filed with the SEC no later than May 1, 2023.

EXHIBITS, FINANCIAL STATEMENT SCHEDULES

Exhibits

The exhibits listed in the accompanying “Index to Exhibits” below are filed or incorporated by reference as part of this report.

Financial Statements

See “Index to Consolidated Financial Statements” within the Consolidated Financial Statements section of this report.

Financial Statement Schedules

All financial schedules have been omitted as the required information is not applicable, not material, or because the information required is included in the consolidated financial statements and notes thereto included in the Consolidated Financial Statements section of this report.

Index to Exhibits

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File Number	Exhibit	Filing Date	
2.1	Agreement and Plan of Merger dated as of September 20, 2020, among Illumina, Inc., SDG Ops, Inc., SDG Ops, LLC and GRAIL, Inc.	8-K	001-35406	2.1	9/21/2020	
2.2	Amendment, dated as of February 5, 2021 to the Agreement and Plan of Merger dated as of September 20, 2020, among Illumina, Inc., SDG Ops, Inc., SDG Ops, LLC, and GRAIL, Inc.	8-K	001-35406	2.1	2/5/2021	
3.1	Amended and Restated Certificate of Incorporation	10-Q	001-35406	3.1	8/11/2022	
3.2	Amended and Restated Bylaws	8-K	001-35406	3.1	2/7/2023	
4.1	Specimen Common Stock Certificate	S-1/A	333-33922	4.1	7/3/2000	
4.2	Indenture related to the 0% Convertible Senior Notes due 2023, dated as of August 21, 2018, between Illumina and The Bank of New York Mellon Trust Company, N.A., as trustee	8-K	001-35406	4.1	8/21/2018	
4.3	Description of Illumina, Inc.'s securities registered pursuant to Section 12 of the Exchange Act of 1934	10-K	001-35406	4.5	2/17/2021	
4.4	Indenture related to the 0.55% notes due 2023 and 2.55% notes due 2031 dated as of March 12, 2021, between Illumina and U.S. Bank National Association, as trustee.	S-3	333-54195	4.6	3/12/2021	
4.5	Form of Officer's Certificate setting forth the terms and forms of the 2023 Notes and 2031 Notes.	8-K	001-35406	4.2	3/22/2021	
4.6	Contingent Value Rights Agreement by and among Illumina, Inc., Computershare Trust Company, N.A., as Trustee and Shareholder Representative Services LLC dated as of August 18, 2021	8-K	001-35406	4.1	8/18/2021	
4.7	Form of Officer's Certificate setting forth the terms and forms of the 2025 Notes and 2027 Notes	8-K	001-35406	4.2	12/13/2022	
+10.1	Form of Indemnification Agreement between Illumina and each of its directors and executive officers	10-Q	000-30361	10.55	7/25/2008	
+10.2	Form of Change in Control Severance Agreement between Illumina and each of its executive officers	10-K	000-30361	10.34	2/26/2009	
+10.3	2000 Employee Stock Purchase Plan, as amended and restated through April 29, 2020	10-Q	001-35406	10.4	8/7/2020	
+10.4	New Hire Stock and Incentive Plan, as amended and restated through October 28, 2009	10-K	000-30361	10.7	2/26/2010	
10.5	License Agreement, effective as of May 6, 1998, between Tufts University and Illumina	10-Q	000-30361	10.5	5/3/2007	
+10.6	The Solexa Unapproved Company Share Option Plan	8-K	000-30361	99.3	11/26/2007	

+10.7	The Solexa Share Option Plan for Consultants	8-K	000-30361	99.4	11/26/2007	
+10.8	Solexa Limited Enterprise Management Incentive Plan	8-K	000-30361	99.5	11/26/2007	
+10.9	Amended and Restated Solexa 2005 Equity Incentive Plan	10-K	000-30361	10.25	2/26/2009	
+10.10	Amended and Restated Solexa 1992 Stock Option Plan	10-K	000-30361	10.26	2/26/2009	
+10.11	Amended and Restated 2015 Stock and Incentive Plan	8-K	001-35406	10.1	2/7/2023	
+10.12	Form of Restricted Stock Unit Agreement for Employees Under Amended and Restated 2015 Stock and Incentive Plan	8-K	001-35406	10.4	2/7/2023	
+10.13	Form of Performance Stock Unit Agreement (Relative TSR) for Employees Under Amended and Restated 2015 Stock and Incentive Plan	8-K	001-35406	10.2	2/7/2023	
+10.14	Form of Performance Stock Unit Agreement (Adjusted EPS) for Employees Under Amended and Restated 2015 Stock and Incentive Plan	8-K	001-35406	10.3	2/7/2023	
+10.15	Form of Option Agreement for Employees Under 2015 Stock and Incentive Plan					X
10.16	Amended and Restated Lease between BMR-9885 Towne Centre Drive LLC and Illumina for the 9885 Towne Centre Drive property, dated January 26, 2007	10-Q	000-30361	10.41	5/3/2007	
10.17	Lease between BMR-9885 Towne Centre Drive LLC and Illumina for the 9865 Towne Centre Drive property, dated January 26, 2007	10-Q	000-30361	10.42	5/3/2007	
10.18	Amended and Restated Lease Agreement, dated March 27, 2012, between ARE-SD Region No. 32, LLC and Illumina	10-Q	001-35406	10.1	5/3/2012	
10.19	First Amendment to Amended and Restated Lease Agreement, dated March 27, 2012, between ARE-SD Region No. 32, LLC and Illumina	10-K	001-35406	10.23	2/18/2015	
10.20	Second Amendment to Amended and Restated Lease Agreement, dated March 27, 2012, between ARE-SD Region No. 32, LLC and Illumina	10-K	001-35406	10.24	2/18/2015	
10.21	Amended and Restated Second Amendment to Amended and Restated Lease Agreement, dated March 27, 2012, between ARE-SD Region No. 32, LLC and Illumina	10-K	001-35406	10.18	2/13/2018	
+10.22	Deferred Compensation Plan, effective December 1, 2007	14D-9	005-60457	99(e)(6)	2/7/2012	
10.23	Lease between BMR-Lincoln Centre LP and Illumina, dated December 30, 2014	10-K	001-35406	10.26	2/18/2015	
10.24	Pooled Patents Agreement between Illumina and Sequenom, Inc., dated December 2, 2014 (with certain confidential portions omitted)	10-K	001-35406	10.27	2/18/2015	

10.25	First Amendment to Pooled Patents Agreement between Illumina and Sequenom, Inc., effective as of April 21, 2016	10-K	001-35406	10.22	2/13/2018
10.26	Second Amendment to Pooled Patents Agreement between Illumina and Sequenom, Inc., effective as of April 17, 2017	10-K	001-35406	10.23	2/13/2018
10.27	Third Amendment to Pooled Patents Agreement between Illumina and Sequenom, Inc., effective as of August 28, 2017 (with certain confidential portions omitted)	10-K	001-35406	10.24	2/13/2018
10.28	Fourth Amendment to Pooled Patents Agreement between Illumina and Sequenom, Inc., effective as of March 15, 2018	10-K	001-35406	10.25	2/11/2020
10.29	Fifth Amendment to Pooled Patents Agreement between Illumina and Sequenom, Inc., effective as of April 12, 2019 (with certain confidential portions omitted)	10-K	001-35406	10.25	2/11/2020
10.30	Sixth Amendment to Pooled Patents Agreement between Illumina and Sequenom, Inc., effective as of May 8, 2020 (with certain confidential portions omitted)	10-Q	001-35406	10.1	10/30/2020
10.31	Agreement for Lease between Granta Park Park Jco 1 Limited and Illumina, dated June 25, 2015	10-Q	001-35406	10.1	7/31/2015
10.32	Third Amendment to Lease between ARE-SD Region No. 32, LLC and Illumina, dated September 2, 2015	10-K	001-35406	10.29	3/2/2016
10.33	First Amendment to Lease between BMR-Lincoln Center LP and Illumina, dated February 23, 2016	10-K	001-35406	10.30	3/2/2016
10.34	Fourth Amendment to Lease between ARE-SD Region No. 32, LLC and Illumina, dated April 14, 2016	10-K	001-35406	10.28	2/14/2017
10.35	Second Amendment to Lease between BMR-Lincoln Center LP and Illumina dated August 15, 2016	10-K	001-35406	10.29	2/14/2017
10.36	Deed of Variation to the Agreement for Lease between Granta Park Jco 1 Limited and Illumina dated October 24, 2016	10-K	001-35406	10.30	2/14/2017
10.37	Third Amendment to Lease between BMR-Lincoln Center LP and Illumina dated January 18, 2018	10-Q	001-35406	10.10	4/25/2018
10.38	Selling Investor Support Agreement dated as of September 20, 2020, among Illumina, Inc. and each of the stockholders party thereto*	8-K	001-35406	10.01	9/21/2020
10.39+	Form of Insurance Matters Agreement	10-Q	001-35406	10.1	11/5/2021
10.40	Credit Agreement, dated as of January 4, 2023, among the Company, as the borrower, the lenders from time to time party thereto, Bank of America, N.A., as administrative agent, an issuing bank and the swingline lender, and the other issuing banks from time to time party thereto	8-K	001-35406	10.1	1/4/2023

10.41	Underwriting Agreement, dated November 29, 2022, between the Company and Goldman Sachs & Co. LLC and Citigroup Global Markets Inc., as representatives of the several underwriters named therein.	8-K	001-35406	1.1	12/13/2022	
21.1	Subsidiaries of Illumina					X
23.1	Consent of Independent Registered Public Accounting Firm					X
24.1	Power of Attorney (included on the signature page)					X
31.1	Certification of Francis A. deSouza pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
31.2	Certification of Joydeep Goswami pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
32.1	Certification of Francis A. deSouza pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X
32.2	Certification of Joydeep Goswami pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X
101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document					X
101.SCH	XBRL Taxonomy Extension Schema					X
101.CAL	XBRL Taxonomy Extension Calculation Linkbase					X
101.LAB	XBRL Taxonomy Extension Label Linkbase					X
101.PRE	XBRL Taxonomy Extension Presentation Linkbase					X
101.DEF	XBRL Taxonomy Extension Definition Linkbase					X
104	Cover Page Interactive Data File - formatted in Inline XBRL and included as Exhibit 101					X

+ Management contract or corporate plan or arrangement

Supplemental Information

No Annual Report to stockholders or proxy materials has been furnished to stockholders as of the date of this report. The Annual Report to stockholders and proxy material will be furnished to our stockholders after the filing of this Annual Report on Form 10-K and we will furnish such material to the SEC at that time.

FORM 10-K CROSS-REFERENCE INDEX

SIGNATURES

Pursuant to the requirements of the 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, on February 17, 2023.

ILLUMINA, INC.

By /s/ FRANCIS A. DESOUZA

Francis A. deSouza
Chief Executive Officer

February 17, 2023

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENT, that each person whose signature appears below constitutes and appoints Francis A. deSouza and Joydeep Goswami, and each or any one of them, his or her true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their, his, or her substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

/s/ FRANCIS A. DESOUZA Francis A. deSouza	Chief Executive Officer, Director (Principal Executive Officer)	February 17, 2023
/s/ JOYDEEP GOSWAMI Joydeep Goswami	Chief Financial Officer, Chief Strategy and Corporate Development Officer (Principal Financial Officer)	February 17, 2023
/s/ SCOTT ERICKSEN Scott Ericksen	Vice President and Chief Accounting Officer (Principal Accounting Officer)	February 17, 2023
/s/ JOHN W. THOMPSON John W. Thompson	Chairman of the Board of Directors	February 17, 2023
/s/ FRANCES ARNOLD Frances Arnold, Ph.D.	Director	February 17, 2023
/s/ CAROLINE D. DORSA Caroline D. Dorsa	Director	February 17, 2023
/s/ ROBERT S. EPSTEIN Robert S. Epstein, M.D.	Director	February 17, 2023
/s/ SCOTT GOTTLIEB Scott Gottlieb, M.D.	Director	February 17, 2023
/s/ GARY S. GUTHART Gary S. Guthart, Ph.D.	Director	February 17, 2023
/s/ PHILIP W. SCHILLER Philip W. Schiller	Director	February 17, 2023
/s/ SUSAN E. SIEGEL Susan E. Siegel	Director	February 17, 2023