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UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended July 29, 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 001-39940

CISCO SYSTEMS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**77-0059951**
(State or other jurisdiction of incorporation or organization)	**(IRS Employer Identification No.)**
170 West Tasman Drive San Jose, California	**95134-1706**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (408) 526-4000
Securities registered pursuant to Section 12(b) of the Act:

Title of each class:	**Trading Symbol(s)**	**Name of each exchange on which registered**
Common Stock, par value $0.001 per share	CSCO	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 (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). ☒ Yes ☐ No
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐
Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒
If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐
Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐
Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). ☐ Yes ☒ No
Aggregate market value of registrant's common stock held by non-affiliates of the registrant, based upon the closing price of a share of the registrant's common stock on January 27, 2023 as reported by the Nasdaq Global Select Market on that date: $198.6 billion
Number of shares of the registrant's common stock outstanding as of September 1, 2023: 4,054,857,783

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement relating to the 2023 Annual Meeting of Stockholders, to be held on December 6, 2023, are incorporated by reference into Part III of this Annual Report on Form 10-K where indicated.

This Annual Report on Form 10-K, including the "Management's Discussion and Analysis of Financial Condition and Results of Operations," contains forward-looking statements regarding future events and our future results that are subject to the safe harbors created under the Securities Act of 1933, as amended (the "Securities Act"), and the Securities Exchange Act of 1934, as amended (the "Exchange Act"). All statements other than statements of historical facts are statements that could be deemed forward-looking statements. These statements are based on current expectations, estimates, forecasts, and projections about the industries in which we operate and the beliefs and assumptions of our management. Words such as "expects," "anticipates," "targets," "goals," "projects," "intends," "plans," "believes," "momentum," "seeks," "estimates," "continues," "endeavors," "strives," "may," variations of such words, and similar expressions are intended to identify such forward-looking statements. In addition, any statements that refer to projections of our future financial performance, our anticipated growth and trends in our businesses, and other characterizations of future events or circumstances are forward-looking statements. Readers are cautioned that these forward-looking statements are only predictions and are subject to risks, uncertainties, and assumptions that are difficult to predict, including those identified below, under "Item 1A. Risk Factors," and elsewhere herein. Therefore, actual results may differ materially and adversely from those expressed in any forward-looking statements. We undertake no obligation to revise or update any forward-looking statements for any reason.

PART I

Item 1. Business

General

Cisco designs and sells a broad range of technologies that power the Internet. We are integrating our product portfolios across networking, security, collaboration, applications and the cloud to create highly secure, intelligent platforms for our customers' digital businesses. These platforms are designed to help our customers manage more users, devices and things connecting to their networks. This will enable us to provide customers with a highly secure, intelligent platform for their digital business.

We conduct our business globally and manage our business by geography. Our business is organized into the following three geographic segments: Americas; Europe, Middle East, and Africa (EMEA); and Asia Pacific, Japan, and China (APJC).

Our products and technologies are grouped into the following categories: Secure, Agile Networks; Internet for the Future; Collaboration; End-to-End Security; Optimized Application Experiences; and Other Products. In addition to our product offerings, we provide a broad range of service offerings, including technical support services and advanced services. Increasingly, we are delivering our technologies through software and services. Our customers include businesses of all sizes, public institutions, governments, and service providers, including large webscale providers. These customers often look to us as a strategic partner to help them use information technology (IT) to differentiate themselves and drive positive business outcomes.

We were incorporated in California in 1984 and reincorporated in Delaware in 2021. Our headquarters are in San Jose, California. The mailing address of our headquarters is 170 West Tasman Drive, San Jose, California 95134-1706, and our telephone number at that location is (408) 526-4000. Our website is www.cisco.com. Through a link on the Investor Relations section of our website, we make available the following filings as soon as reasonably practicable after they are electronically filed with or furnished to the Securities and Exchange Commission (SEC) at sec.gov: our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and any amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act. All such filings are available free of charge. The information published on our website, or any other website referenced herein, is not incorporated into this report.

Strategy and Priorities

As our customers add billions of new connections to their enterprises, and as more applications move to a multicloud environment, the network becomes even more critical. Our customers are navigating change at an unprecedented pace. In this dynamic environment, we believe their priorities are to transform infrastructure, secure the enterprise, power hybrid work, reimagine applications, and drive toward sustainability.

Our strategy is to securely connect everything. We are committed to driving a trusted customer experience, through our innovation, solutions, choice, and people.

Customer Priorities

Transform Infrastructure

In an increasingly digital and connected world, where each new connection to the Internet puts more demand on the network, our customers are looking to modernize and transform their infrastructure in an automated way in order to manage and monitor each connection in real time. Our strategy to help our customers transform their infrastructure with the network at the core began with Software-Defined Access (SD-Access) technology, one of our leading enterprise architectures, and continued with the launch of our Catalyst 9000 series of switches.

We have continued to transform our enterprise access portfolio by bringing together several technologies to form the only integrated architecture with built-in simplicity, automation and security at the foundation. This architecture is designed to enable our customers to securely connect their users and devices to applications and data over any network, no matter where they are.

We have introduced several innovations that extend our networking capabilities to wireless and enterprise routing products, including Software-Defined Wide Area Network (SD-WAN) and Internet of Things (IoT) edge platforms. Our SD-WAN solutions are designed to provide direct branch to cloud connectivity, enabling the workforce to access their software-as-a-service (SaaS) applications and workloads in an optimized and highly secure manner. We have continued to expand our SD-WAN offering, through our Cloud OnRamp integrations with several webscale providers to deliver predictable and highly secure application experiences.

To further our innovation in this area, we are applying the latest technologies, such as machine learning and advanced analytics, to operate and enhance network capabilities. These network product offerings are designed to help enable customers to detect cybersecurity threats, even in encrypted traffic. As such, we have created, in our view, the only network that is designed for security while also helping to maintain privacy.

Our customers are operating in multicloud environments with private, public and hybrid clouds. For the data center, our strategy is to deliver multicloud architectures that bring policy and operational consistency, regardless of where applications or data reside, by extending our Application Centric Infrastructure (ACI) and our hyperconverged offerings. We continue to invest in our data center portfolio to help meet the growing demand for cloud-delivered technologies. Our Nexus Cloud platform is designed to help our customers deploy, manage, and operate their data center networks from the cloud.

Our technology strategy for the Internet for the Future is aimed at addressing the broad adoption of multicloud and application environments. We continue to make significant investments in the development of software, silicon and optics — which we believe are the building blocks for the Internet for the Future.

We introduced Cisco Silicon One, a single unified silicon architecture, as well as the Cisco 8000 carrier-class router family built on Cisco Silicon One and our operating system, Cisco IOS XR7. We have also expanded our Cisco Silicon One platform from a routing focused solution to one which addresses the webscale switching market. By combining our routed optical networking solution integrating our routers with pluggable optics, we can further help deliver cost savings to our customers.

Secure the Enterprise

With the rapid growth in modern applications, and with more distributed work environments, securing the enterprise has become more complex and difficult for our customers to manage. We believe every organization requires new or enhanced security architectures to defend against increasing cyber attacks. Our security strategy is focused on delivering a simple and effective cyber-security architecture combining network, cloud and endpoint-based solutions that recognizes the critical importance of data privacy.

We are investing significant resources across our security portfolio focused on cloud-based offerings, artificial intelligence-driven threat detection and end-to-end security architectures. We unveiled our strategic plan for a global, cloud-delivered, integrated platform that secures and connects organizations of any shape and size. Cisco Security Cloud is designed to be the most open, end-to-end, security platform across hybrid multi-cloud environments, while also minimizing the attack surface and automating security policies across an organization’s environment. This extends to our secure access service edge (SASE) framework and Zero Trust architecture, where we have developed a cloud-delivered stack. We are also delivering unified detection and response capabilities with Cisco Extended Detection and Response (XDR), a cloud-based solution, and introduced new innovations across firewall, multicloud and application security capabilities. To enable a more optimized hybrid work experience with simple access across any location, device, and application, we have brought to market a security service edge (SSE) solution. Additionally, we have announced generative AI capabilities as part of our Security Cloud platform to simplify security operations and increase efficiency.

Power Hybrid Work

Over the last several years, the world has shifted to a hybrid work environment, and we believe that our customers are looking to support a blend of onsite and offsite workers into the future. To enable a hybrid workforce, customers require secure access, collaboration, and technologies to empower their teams to connect seamlessly and to work from anywhere.

Customers are looking to us to help improve how their people communicate, collaborate and to increase productivity. At Cisco, we are focused on providing and delivering highly secure collaboration experiences to help our customers create a secure hybrid work environment.

We believe our collaboration portfolio, which includes our subscription-based Webex conferencing platform, with meetings, devices, calling and messaging, is at the center of our customers' strategy for enabling their teams to be more productive and secure. To help our customers transform their workplaces, we continue to invest to expand our capabilities by introducing new Webex Calling innovations in the Webex Suite to improve work flexibility, reliability, and quality. We also launched new devices for hybrid work which we are making interoperable with other vendors' collaboration offerings to create a seamless user experience.

Reimagine Applications

In our view, over the next several years, customers will be increasingly writing modern software applications that can run on any hybrid cloud and will be adding billions of connections to their environments. In a multicloud environment, customers must reimagine how they design, develop and deploy their applications. They need to be able to build applications quickly, deploy them nearly anywhere, monitor experiences, and act in real time.

We believe we are uniquely positioned to enable successful business outcomes for customers in hybrid and multicloud environments. In our view, networks are increasingly critical to business success and we believe our customers will benefit from the insights and intelligence that we are making accessible through our highly differentiated platforms.

We are continuing our commitment to deliver full stack observability from the application to the infrastructure to give our customers greater insights that enable faster, better decision making. We are doing this by adding key elements to our portfolio, such as: infrastructure optimization with Intersight, network monitoring with technology from ThousandEyes, application performance monitoring with AppDynamics, as well as our security innovations.

Journey to Sustainability

The world faces serious environmental challenges, such as climate change, resource depletion, and biodiversity loss, and, as a large global corporation, Cisco can play a role in supporting mitigation of these challenges. Our strategy focuses on accelerating the transition to clean energy, evolving our business from linear to circular, and investing in resilient ecosystems. We are striving to reduce our own environmental footprint, and to use our technology and expertise to help our customers and suppliers reduce theirs, contributing to a healthier and more resilient planet. Additionally, we have set long-term goals to address the environmental impacts from our products and business operations.

We strive to reduce the effects of our operations and supply chain, help our customers decrease greenhouse gas (GHG) emissions, and support our communities experiencing direct effects of a changing climate by, among others:

- Continuing to invest in renewable energy, including investments in solar and wind energy;
- Designing our products and packaging for reuse, repair, recycling, and resource efficiency and managing our equipment for multiple lifecycles;
- Continuing to standardize visibility and insights across our portfolio to enable customers to measure, monitor, and manage energy consumption;
- Investing in projects to improve the efficiency of our offices, labs, and data centers worldwide;
- Working with our component suppliers, manufacturing partners, and logistic providers to reduce emissions and set goals for absolute GHG emissions reductions;
- Helping our employees to engage with events and opportunities to raise awareness and create a sense of community around sustainability; and
- Providing critical connectivity in the aftermath of natural disasters.

Strategic Pillars

To execute on our strategy and address our customer priorities, we are focusing on the following six strategic pillars:

- *Secure, Agile Networks* — Build networking solutions with built-in simplicity, security, agility and automation that can be consumed as-a-service.
- *Optimized Application Experiences* — Enable greater speed, agility and scale of cloud-native applications.
- *Hybrid Work* — Deliver highly secure access, a safer workplace and collaboration experiences for the hybrid workforce.
- *Internet for the Future* — Transform connectivity by efficiently meeting the ever-growing demand for low-latency and higher speeds.
- *End-to-End Security* — Build simple, integrated, and high efficacy end-to-end security solutions, delivered on-premise or in the cloud.
- *Capabilities at the Edge* — Develop new capabilities for a distributed world while enhancing the developer experience and extending enterprise and carrier networks.

We are continuing to incorporate Artificial Intelligence (AI) and Machine Learning (ML) across our portfolio to enable further innovation and to empower our customers to drive increased productivity and better user experiences. We are investing in new opportunities in AI, launching new technologies across our product portfolios designed to boost productivity, enhance policy management and simplify tasks. Our AI-scale infrastructure will allow our customers to process AI workloads more efficiently. We are also accelerating our efforts to enable the delivery of network functionality as a service as our customers increasingly want to consume technologies in flexible ways. We made the initial step with our as-a-service portfolio, Cisco Plus, and our first offer, Cisco Plus hybrid cloud, which combines our data center compute, networking and storage portfolio. Cisco Plus includes our plans to deliver networking-as-a-service, which is designed to unify networking, security and observability across access, wide area network (WAN), and cloud domains.

Transforming our Business Model

We are transforming our offerings to meet the evolving needs of our customers. Historically, our various networking technology products have aligned with their respective product categories. However, increasingly our offerings are crossing multiple product categories. As our core networking offerings evolve, we expect we will add more common software features across our core networking platforms. We are increasing the amount of software offerings that we provide and the proportion of subscription software offerings. We have various software offerings that fall into the broad categories of subscription arrangements and perpetual licenses. Our subscription arrangements include term software licenses and associated service arrangements, as well as SaaS.

As part of the transformation of our business, we continued to make strides to develop and sell more software and subscription-based offerings. We are also focused on the entire customer lifecycle to drive expansion and renewals. We will continue to invest in network-as-a-service offerings to provide our customers with flexibility in how they want to consume our technologies.

For a discussion of the risks associated with our strategy, see "Item 1A. Risk Factors," including the risk factor entitled "We depend upon the development of new products and services, and enhancements to existing products and services, and if we fail to predict and respond to emerging technological trends and customers' changing needs, our operating results and market share may suffer." For information regarding sales of our major products and services, see Note 19 to the Consolidated Financial Statements.

Products and Services

Our products and services are grouped into the following categories:

Secure, Agile Networks

Secure, Agile Networks consists of our core networking technologies of switching, enterprise routing, wireless, and compute products. These technologies consist of both hardware and software offerings, including software licenses and SaaS, that help our customers build networks, automate, orchestrate, integrate, and digitize data. We believe it is critical for us to continue to deliver continuous value to our customers. We continued to make progress in shifting more of our business to software and subscriptions across our core networking portfolio, and in expanding our software offerings. Our objective is to continue converging our on-premise solutions with our cloud managed solutions across our enterprise networking portfolio.

Our Switching portfolio encompasses campus switching as well as data center switching offerings. Our campus switching offerings provide the foundation for converged data, voice, video, and IoT services. These switches offer enhanced security and reliability and are designed to scale efficiently as our customers grow. Within campus switching are our Catalyst 9000 series of switches that include hardware with embedded software, along with a software subscription referred to as Cisco DNA. Cisco DNA provides automation, analytics and security features and can be centrally monitored, managed, and configured. With the expansion of WiFi-6, we have expanded our portfolio to include multi-gigabit technology in our switches in order to manage higher bandwidth and manage network speed. Our data center switching offerings, led by the Nexus 9000 series, provide the foundation for mission critical data centers with high availability, scalability, and security across traditional data centers and private and public cloud data centers. We continue to add greater visibility and analytics across our networks and applications, enabling us to deliver better experiences for our customers.

Our Enterprise Routing portfolio interconnects public and private wireline and mobile networks, delivering highly secure and reliable connectivity to campus, data center and branch networks for our large to small enterprise and commercial customers. Our routing solutions are designed to meet the scale, reliability, and security needs of our customers.

Our Wireless portfolio provides indoor and outdoor wireless coverage designed for seamless roaming use of voice, video, and data applications. These products include wireless access points and controllers that are on-premise and cloud managed, and combined with our Switching portfolio, delivers a converged access solution that is powerful, yet simple.

Our Compute portfolio incorporates various technologies and solutions including the Cisco Unified Computing System, HyperFlex, our hyperconverged offering, and software management capabilities, which combine computing, networking, and storage infrastructure management and virtualization to deliver agility, simplicity, and scale.

Internet for the Future

Our Internet for the Future product category consists of our routed optical networking, 5G, silicon and optics solutions. We are focusing on transforming connectivity to the Internet and the cloud environment by efficiently meeting the growing demand for low-latency and higher speeds. Our routed optical networking systems, based on our Silicon One and pluggable optic solutions, allow us to transform the economics of building and operating networks for our service provider customers, including our webscale customers. Our Cisco 8000 series routers provide broad capacity in high-density designs, allowing our customers to reduce operational footprints, lower carbon emissions, and evolve to more efficient network architectures. We believe silicon and optics are foundational technologies for the continued buildout of the Internet. As connection speeds increase, optics become increasingly important in our view.

Collaboration

Our Collaboration product category consists of our Meetings, Collaboration Devices, Calling, Contact Center and Communication Platform as a Service (CPaaS) offerings. Our offerings within the Collaboration portfolio consist of software offerings, including perpetual licenses and subscription arrangements, as well as hardware. Our Collaboration strategy is to power hybrid work by reimagining employee and customer experiences to be more inclusive and engaging by providing technology that enables distributed teams to collaborate effortlessly. We offer end-to-end collaboration solutions that can be delivered from the cloud, on-premise or within hybrid cloud environments allowing customers to transition their collaboration solutions from on-premise to the cloud. Artificial intelligence and machine learning capabilities are embedded across the Webex portfolio, providing collaboration experiences that integrate people insights, relationship and audio intelligence to help improve productivity. Our CPaaS is a cloud communications platform that integrates communication channels and existing back-end business systems together to help enable the orchestration and automation of all customer and employee interactions.

End-to-End Security

The End-to-End Security product category consists of our Cloud and Application Security, Industrial Security, Network Security, and User and Device Security offerings. Security continues to be a leading priority for our customers, regardless of size or industry. We continue to invest in resources across our security portfolio focused on cloud-based offerings, AI-driven threat detection and end-to-end security architectures. Additionally, we continue to invest in expanding our SASE architecture by delivering combined network and security functionality in a single cloud-native service.

Optimized Application Experiences

The Optimized Application Experiences product category consists of our full stack observability and network assurance offerings. Our full stack observability offerings are designed to bring together and provide end-to-end visibility of our customer's environments across applications, networks, multi-cloud infrastructures and the Internet, to help deliver full stack observability for modern environments and drive relevant real-time insights. Our Intersight Infrastructure Services, a cloud-delivered SaaS offering, provides lifecycle operations management, automation, orchestration, and monitoring capabilities for customers' infrastructure deployments from Data Center to the Edge. Our monitoring and analytics offering, AppDynamics, monitors performance across different application-related domains. Our network assurance offering, ThousandEyes, is a network intelligence platform that provides in-depth visibility into network and Internet performance. It enables organizations to see, understand, and improve every digital experience and assure seamless connectivity for their modern digital environments.

Services

In addition to our product offerings, we provide a broad range of service and support options for our customers. Our overall service and support offerings are combined into one organization, Customer Experience, that is responsible for the end-to-end customer experience.

Our support and maintenance services help our customers ensure their products operate efficiently, remain available, and benefit from the most up-to-date system and application software. These services help customers protect their network investments, manage risk, and minimize downtime for systems running mission-critical applications.

We also provide comprehensive advisory services that are focused on responsive, preventive, and consultative support of our technologies for specific networking needs. We are investing in and expanding advisory services in the areas of software, cloud, security, and analytics, which reflects our strategy of selling customer outcomes. We are focused on three priorities: utilizing technology advisory services to drive higher product and services; assessment and migration services providing the tools, expertise and methodologies to enable our customers to migrate to new technology platforms; and providing optimization services aligned with customers' business expectations.

Customers and Markets

Many factors influence the IT, collaboration, and networking requirements of our customers. These include the size of the organization, number and types of technology systems, geographic location, and business applications deployed throughout the customer's network. Our customer base is not limited to any specific industry, geography, or market segment. Our customers primarily operate in the following markets: enterprise, commercial, service provider, and public sector.

Enterprise

Enterprise businesses are large regional, national, or global organizations with multiple locations or branch offices. Many enterprise businesses have unique IT, collaboration, and networking needs within a multivendor environment. We offer service and support packages, financing, and managed network services, primarily through our service provider partners. We sell these products through a network of third-party application and technology vendors and channel partners, as well as selling directly to these customers.

Commercial

The commercial market represents larger, or midmarket and small businesses. We sell to our midmarket customers through a combination of our direct sales force and channel partners. These customers typically require the latest advanced technologies that our enterprise customers demand, but with less complexity. Small businesses require information technologies and communications products that are easy to configure, install, and maintain. We sell to these smaller organizations within the commercial market primarily through channel partners.

Service Providers

Service providers offer data, voice, video, and mobile/wireless services to businesses, governments, utilities, and consumers worldwide. The service provider market includes regional, national, and international wireline carriers, webscale operators as well as Internet, cable, and wireless providers. We also include media, broadcast, and content providers within our service provider market, as the lines in the telecommunications industry continue to blur between traditional network-based, content-based and application-based services. Service providers use a variety of our products and services for their own networks. In addition, many service providers use Cisco data center, virtualization, and collaboration technologies to offer managed or Internet-based services to their business customers. Compared with other customers, service providers are more likely to require network design, deployment, and support services because of the greater scale and higher complexity of their networks, whose requirements are addressed, we believe, by our architectural approach.

Public Sector

The public sector market includes federal, state and local governments, as well as educational institution customers. Many public sector customers have unique IT, collaboration, and networking needs within a multi-vendor environment. We sell to public sector customers through a network of third-party application and technology vendors, channel partners, as well as through direct sales.

Sales Overview

As of the end of fiscal 2023, our worldwide sales and marketing functions consisted of approximately 26,000 employees, including managers, sales representatives, and technical support personnel. We sell our products and services both directly and indirectly through a variety of channels with support from our salesforce. A substantial portion of our products and services is sold indirectly through channel partners, and the remainder is sold through direct sales. Channel partners include systems integrators, service providers, other third-party resellers, and distributors.

Systems integrators and service providers typically sell directly to end users and often provide system installation, technical support, professional services, and other support services in addition to network equipment sales. Systems integrators also typically integrate our products into an overall solution. Some service providers are also systems integrators.

Distributors may hold inventory and sell to systems integrators, service providers, and other third-party resellers. We refer to sales through distributors as our two-tier system of sales to the end customer. Revenue from two-tier distributors is recognized based on a sell-in method. These distributors may be given business terms that allow them to return a limited portion of inventory, receive credits for changes in selling prices, receive certain rebates, and participate in various cooperative marketing programs.

For information regarding risks related to our sales channels, see “Item 1A. Risk Factors,” including the risk factors entitled “Disruption of or changes in our distribution model could harm our sales and margins” and “Inventory management relating to our sales to our two-tier distribution channel is complex, and excess inventory may harm our gross margins.”

For information regarding risks relating to our international operations, see “Item 1A. Risk Factors,” including the risk factors entitled “Our operating results may be adversely affected by unfavorable economic and market conditions and the uncertain geopolitical environment;” “Entrance into new or developing markets exposes us to additional competition and will likely increase demands on our service and support operations;” “Due to the global nature of our operations, political or economic changes or other factors in a specific country or region could harm our operating results and financial condition;” “We are exposed to fluctuations in currency exchange rates that could negatively impact our financial results and cash flows;” and “Cyber attacks, data breaches or other incidents may disrupt our operations, harm our operating results and financial condition, and damage our reputation or otherwise materially harm our business; and cyber attacks, data breaches or other incidents on our customers’ or third-party providers’ networks, or in cloud-based services provided to, by, or enabled by us, could result in claims of liability against us, give rise to legal and/or regulatory action, damage our reputation or otherwise materially harm our business,” among others.

Our service offerings complement our products through a range of consulting, technical, project, quality, and software maintenance services, including 24-hour online and telephone support through technical assistance centers.

Financing Arrangements

We provide financing arrangements for certain qualified customers to build, maintain, and upgrade their networks. We believe customer financing is a competitive advantage in obtaining business, particularly for those customers involved in significant infrastructure projects. Our financing arrangements include loans, leases (sales-type, direct financing and operating) and channels financing arrangements.

Acquisitions, Investments, and Alliances

The markets in which we compete require a wide variety of technologies, products, and capabilities. We continue to evaluate opportunities to acquire and invest in businesses and technologies that complement and enable further investment in our key priority areas.

Acquisitions

We acquire companies in order to gain access to talent, technology, products and features, operational capabilities or new markets. The risks associated with acquisitions are more fully discussed in “Item 1A. Risk Factors,” including the risk factor entitled “We have made and expect to continue to make acquisitions that could disrupt our operations and harm our operating results.”

Investments in Privately Held Companies

We make investments in privately held companies that develop technology or provide services that are complementary to our products or that provide insights into emerging technologies that may become relevant to our businesses. The risks associated with these investments are more fully discussed in "Item 1A. Risk Factors," including the risk factor entitled "We are exposed to fluctuations in the market values of our portfolio investments and in interest rates; impairment of our investments could harm our earnings."

Strategic Alliances

We pursue strategic alliances with other companies in areas where collaboration can produce industry advancement and accelerate new markets. The objectives and goals of a strategic alliance can include technology exchange, product development, joint sales and marketing, or new market creation.

Companies with which we have strategic alliances in some areas may be competitors in other areas, and in our view this trend may increase. The risks associated with our strategic alliances are more fully discussed in "Item 1A. Risk Factors," including the risk factor entitled "If we do not successfully manage our strategic alliances, we may not realize the expected benefits from such alliances and we may experience increased competition or delays in product development."

Competition

We compete in the networking and communications equipment markets, providing products and services designed to transport, and help secure data, voice, and video traffic across cloud, private and public networks and the Internet. These market factors represent a competitive threat to us. We compete with numerous vendors in each product category. The overall number of our competitors providing niche product solutions may increase. Also, the identity and composition of competitors may change as we increase our activity in newer product areas, and in key priority and growth areas. As we continue to expand globally, we may see new competition in different geographic regions. In particular, we have experienced price-focused competition from competitors in Asia, especially from China, and we anticipate this will continue.

Our competitors (in each case relative to only some of our products or services) include: Amazon Web Services LLC; Arista Networks, Inc.; Broadcom Inc.; Ciena Corporation; CrowdStrike Holdings, Inc.; Datadog Inc.; Dell Technologies Inc.; Dynatrace Inc.; Fortinet, Inc.; Hewlett-Packard Enterprise Company; Huawei Technologies Co., Ltd.; Juniper Networks, Inc.; Microsoft Corporation; New Relic, Inc.; Nokia Corporation; Nvidia Corporation; Palo Alto Networks, Inc.; RingCentral, Inc.; VMware, Inc.; Zoom Video Communications, Inc.; and Zscaler, Inc.; among others.

Some of our competitors compete across many of our product lines, while others are primarily focused in a specific product area. Barriers to entry are relatively low, and new ventures to create products that do or could compete with our products are regularly formed. In addition, some of our competitors may have greater resources, including technical and engineering resources, than we do. As we expand into new markets, we will face competition not only from our existing competitors but also from other competitors, including existing companies with strong technological, marketing, and sales positions in those markets. We also sometimes face competition from resellers and distributors of our products. Companies with which we have strategic alliances in some areas may be competitors in other areas, and this trend may increase. For example, the enterprise data center is undergoing a fundamental transformation arising from the convergence of technologies, including computing, networking, storage, and software, that previously were segregated. Additionally, companies that are strategic alliance partners in some areas of our business may acquire or form alliances with our competitors, thereby reducing their business with us.

The principal competitive factors in the markets in which we presently compete and may compete in the future include the ability to sell successful business outcomes; the ability to provide a broad range of networking and communications products and services; product performance; price; the ability to introduce new products, including providing continuous new customer value and products with price-performance advantages; the ability to reduce production costs; the ability to provide value-added features such as security, reliability, and investment protection; conformance to standards; market presence; the ability to provide financing; and disruptive technology shifts and new business models.

We also face competition from customers to which we license or supply technology and suppliers from which we transfer technology. The inherent nature of networking requires interoperability. As such, we must cooperate and, at the same time, compete with many companies. Any inability to effectively manage these complicated relationships with customers, suppliers, and strategic alliance partners could have a material adverse effect on our business, operating results, and financial condition and accordingly affect our chances of success.

Research and Development

We regularly introduce new products and features to address the requirements of our markets. We allocate our research and development budget among our product categories, which consist of Secure, Agile Networks; Internet for the Future; Collaboration; End-to-End Security; Optimized Application Experiences; and Other Product technologies. Our research and development expenditures are applied generally to all product areas, with specific areas of focus being identified from time to time. Our expenditures for research and development costs were expensed as incurred.

The industry in which we compete is subject to rapid technological developments, evolving standards, changes in customer requirements, and new product introductions and enhancements. As a result, our success depends, in part, on our ability, on a cost-effective and timely basis, to continue to enhance our existing products and to develop and introduce new products that improve performance and reduce total cost of ownership. To achieve these objectives, our management and engineering personnel work with customers to identify and respond to customer needs, as well as with other innovators of Internet networking products, including universities, laboratories, and corporations. We also expect to continue to make acquisitions and strategic investments, where appropriate, to provide us with access to new technologies. Nonetheless, there can be no assurance that we will be able to successfully develop products to address new customer requirements and technological changes or that those products will achieve market acceptance.

Manufacturing

We rely on contract manufacturers for our manufacturing needs. We presently use a variety of independent third-party companies to provide services related to printed-circuit board assembly, in-circuit test, product repair, and product assembly. Proprietary software in electronically programmable memory chips is used to configure products that meet customer requirements and to maintain quality control and security. The manufacturing process enables us to configure the hardware and software in unique combinations to meet a wide variety of individual customer requirements. The manufacturing process also uses automated testing equipment and burn-in procedures, as well as comprehensive inspection, testing, and statistical process controls, which are designed to help ensure the quality and reliability of our products. The manufacturing processes and procedures are generally certified to International Organization for Standardization 9001 standards.

Our arrangements with contract manufacturers generally provide for quality, cost, and delivery requirements, as well as manufacturing process terms, such as continuity of supply; inventory management; flexibility regarding capacity, quality, and cost management; oversight of manufacturing; and conditions for use of our intellectual property. We have not entered into any significant long-term contracts with any manufacturing service provider. We generally have the option to renew arrangements on an as-needed basis. These arrangements generally do not commit us to purchase any particular amount or any quantities beyond amounts covered by orders or forecasts that we submit covering discrete periods of time.

Patents, Intellectual Property, and Licensing

We seek to establish and maintain our proprietary rights in our technology and products through the use of patents, copyrights, trademarks, and trade secret laws. We have a program to file applications for and obtain patents, copyrights, and trademarks in the United States and in selected foreign countries where we believe filing for such protection is appropriate. We also seek to maintain our trade secrets and confidential information by nondisclosure policies and through the use of appropriate confidentiality agreements. We have obtained a substantial number of patents and trademarks in the United States and in other countries. There can be no assurance, however, that the rights obtained can be successfully enforced against infringing products in every jurisdiction. Although we believe the protection afforded by our patents, copyrights, trademarks, and trade secrets has value, the rapidly changing technology in the networking industry and uncertainties in the legal process make our future success dependent primarily on the innovative skills, technological expertise, and management abilities of our employees rather than on the protection afforded by patent, copyright, trademark, and trade secret laws.

Many of our products are designed to include software or other intellectual property licensed from third parties. While it may be necessary in the future to seek or renew licenses relating to various aspects of our products, we believe, based upon past experience and standard industry practice, that such licenses generally could be obtained on commercially reasonable terms. Nonetheless, there can be no assurance that the necessary licenses would be available on acceptable terms, if at all. Our inability to obtain certain licenses or other rights or to obtain such licenses or rights on favorable terms, or the need to engage in litigation regarding these matters, could have a material adverse effect on our business, operating results, and financial condition. Moreover, inclusion in our products of software or other intellectual property licensed from third parties on a nonexclusive basis can limit our ability to protect our proprietary rights in our products.

The industry in which we compete is characterized by rapidly changing technology, a large number of patents, and frequent claims and related litigation regarding patent and other intellectual property rights. There can be no assurance that our patents and other proprietary rights will not be challenged, invalidated, or circumvented; that others will not assert intellectual property rights to technologies that are relevant to us; or that our rights will give us a competitive advantage. In addition, the laws of some foreign countries may not protect our proprietary rights to the same extent as the laws of the United States. The risks associated with patents and intellectual property are more fully discussed in “Item 1A. Risk Factors,” including the risk factors entitled “Our proprietary rights may prove difficult to enforce,” “We may be found to infringe on intellectual property rights of others,” and “We rely on the availability of third-party licenses.”

Government Regulation

We are subject to numerous regulations and laws in the United States and abroad that involve matters central to our business. Many of these regulations and laws are evolving and their applicability and scope, as interpreted by courts and regulators, remain uncertain. These regulations and laws involve a variety of matters including privacy, data protection and personal information, tax, trade, encryption technology, environmental sustainability (including climate change), human rights, product certification, and national security.

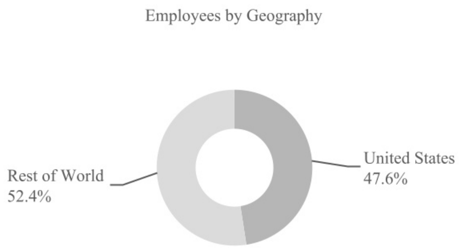
A failure, or alleged failure, by us to comply with regulations or laws could have a material adverse effect on our business, operating results, or financial condition. For additional information about government regulation and laws applicable to our business, see “Item 1A. Risk Factors,” including the risk factor entitled “Our business, operating results and financial condition could be materially harmed by evolving regulatory uncertainty or obligations applicable to our products and services” and Note 14 to the Consolidated Financial Statements, subsection (f) “Legal Proceedings.”

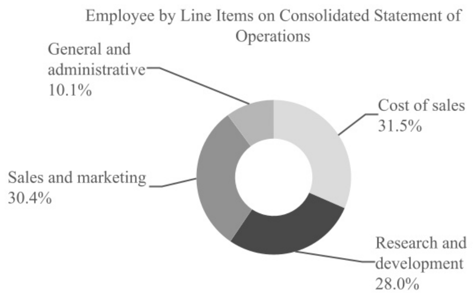
Talent and Culture

At Cisco, we value our people and our technology, and we leverage our broader ecosystems to positively impact the world and pursue our purpose to Power an Inclusive Future for All. Our goal is to attract, retain, and develop talent in order to help our customers connect, secure, and accelerate their digital agility. Our relationship with our employees is one of mutual benefit. Our employees bring talent and ingenuity to everything we do, and in turn, we provide employees with meaningful careers and development opportunities.

For the third year in a row, Cisco has been named the number one company to work for in Fortune Magazine’s 100 Best Companies to Work For® 2023 rankings in the United States. Fortune and Great Place to Work have published their United States rankings for the past 26 years, and Cisco has been recognized on every annual list. Cisco has also received top ranking in 15 additional countries, including Australia, Canada, Costa Rica, Mexico, Norway, Poland, Portugal, Saudi Arabia, Singapore, Indonesia, Japan, Spain, Switzerland, United Kingdom, and Vietnam.

As of July 29, 2023, we had approximately 84,900 employees and they are categorized as follows:





We support our employees through times of change and enable them to be their best. We do this by fostering a Conscious Culture. Conscious Culture speaks to the importance of everyone being aware — “conscious” — of the environment they are part of, and feeling accountable, empowered, and expected to contribute to creating a culture where all Cisco employees feel safe and can thrive. We’re aware of how we treat one another and speak up when we see behavior that’s out of step with our beliefs. There is a direct connection between the culture we create internally and how our people are helping bring about a better world.

In the same way that every employee at Cisco is responsible for our Conscious Culture, we also want every employee to feel responsible for and contribute to our purpose to Power an Inclusive Future for All. This is as much a commitment from Cisco as it is from our employees. Our people often ask the toughest questions around how we are impacting society for the better, from addressing homelessness to combating climate change. And often the best ideas for how we can do even more come directly from them. Future employees expect it too. More and more, talent want to work for a company where their work has meaning and where they see their values reflected in the organization.

Inclusion & Diversity

Inclusion and diversity are core components in our Conscious Culture. Inclusivity is our strength and our priority. We want every employee to feel valued, respected, and heard. We are prioritizing inclusion and diversity across the company, recognizing that connecting people of all experiences and backgrounds allows us to improve innovation and collaboration.

In order to continue accelerating diversity and finding extraordinary talent, we have designed a framework that includes introducing new tools and technologies to help accurately map the talent market, creating job roles that attract highly qualified diverse candidates, and expanding the diversity within our interview panels.

We currently have a total of 29 Inclusive Communities comprised of 11 Employee Resource Organizations and 18 Employee Networks supporting full-spectrum diversity globally, including gender, ethnicity, race, sexual orientation, age, ability, veteran status, religion, culture, background, as well as varied experiences, strengths, and perspectives. These thriving communities continue to be a source of strength and support for employees, and they help to foster a more conscious culture by providing opportunities for proximity and learning.

Cisco has signed the CEO Action for Diversity and Inclusion Pledge. The CEO Action for Diversity & Inclusion Pledge is a CEO-driven pledge to drive measurable action and meaningful change in advancing diversity, equity and inclusion in the workplace. This year, Cisco also signed The Valuable 500 statement, a global movement putting disability inclusion on the business leadership agenda and celebrating those committed to inclusion. We are delivering on these actions by accelerating diversity across the full-spectrum of diversity — including gender, age, race, ethnicity, sexual orientation, ability, nationality, religion, veteran status, background, culture, experience, strengths and perspectives. At Cisco, it starts at the top: 42% of our Executive Leadership Team (ELT) are women and 50% are diverse in terms of ethnicity.

We publish certain gender diversity and ethnic diversity workforce data annually. Across our global company, we have driven broad improvements in overall workforce diversity. Based on our fiscal 2022 data which excludes certain acquisitions, our global employee base was comprised of 29% women, 71% men and 0.1% nonbinary, and our U.S. employee base was comprised of the following ethnicities: 50.9% White/Caucasian, 34.6% Asian, 6.6% Hispanic/Latino, 5.5% African American/Black, 1.9% two or more races (not Hispanic or Latino), 0.3% American Indian or Alaska Native and 0.2% Native Hawaiian/Other Pacific Islander.

With respect to social justice, Cisco has been partnering across the globe to scale and amplify our positive impact. We have published our Social Justice Beliefs & Actions, which is our blueprint for how we respond to injustice and address inequity for any community. We are creating actions that can be replicated and scaled and are designed to cover the full spectrum of diversity, inclusive of gender, generation, race, ethnicity, sexual orientation, ability, nationality, and background — the foundation of our Conscious Culture. This work is part of a plan for Cisco to drive transformational, generational impact for vulnerable communities. Our Social Justice Action Office helps drive accountability, progress, and excellence in our strategic actions in this area, which are designed to address the broader ecosystem including our employees, partners, customers, and suppliers.

Compensation and Benefits

Our total compensation philosophy is designed to attract, reward, and retain talent. It provides market competitive, performance-based compensation aligned with each employee’s contribution and impact to the value we drive to our customers, partners and stockholders. We reward and recognize our employees for effecting innovation, collaboration, profitability, and growth within our geographies, product lines, and functions.

Cisco has always been committed to compensating our employees fairly and equitably. We are a founding signer of the White House Equal Pay Pledge and the Parity.org pledge, and are a leader in the charge to make fair pay a reality for all employees through the Employers for Pay Equity Consortium. We have also introduced an innovative and inclusive framework that provides us powerful analytics to evaluate our complex compensation system. For example, by using these powerful analytics, we are able to test for pay parity on a regular basis, and when gaps are found, we strive to correct them.

As part of our Social Justice Beliefs and Actions, we have expanded our pay parity program beyond base salary to include additional forms of compensation fairness such as promotion, bonuses, and stock decisions made in our rewards programs. We aim to ensure the program addresses all employees across the full spectrum of diversity incorporating our global self-reported data collection.

Health & Well-being

We have an ongoing commitment to focus on the health, safety, and well-being of our employees. We provide our employees and their families with high-quality, flexible, and convenient benefits and resources for their physical, mental, and financial well-being. We strive to support our employees as they balance careers and personal lives, as well as their own physical, emotional, and financial health. We continue to emphasize a focus on both physical and mental health, recognizing the need to create an environment where employees can speak openly about mental health and other matters.

We have hosted discussions during Cisco Check-Ins, expanded our Safe to Talk program, introduced mindfulness courses, enhanced our Employee Assistance Program offerings, improved the out-of-network provider benefit for substance abuse and mental health treatment, and more. In fiscal 2023, we continued to offer employees "A Day for Me," which were paid days off that allowed for each individual to recharge and rest. We have moved towards a hybrid work model in certain countries, giving our employees the flexibility to work offsite or at onsite Cisco locations.

Employee Development

We know careers are not static pathways that look the same for everyone. We also know that the world of work will continue to rapidly evolve, requiring new skillsets. At Cisco, we believe that your career is owned by you, supported by your leader, and enabled by Cisco. This means that while each employee has the power to shape their career on their own terms, they also have a supportive ecosystem to develop the skills they need to succeed both today and tomorrow. We strive to create a culture of "one company, many careers." In fiscal 2023, we launched a new career strategy for our people focused on areas we know determine a successful career at Cisco—personal brand, network, expertise, and experience—and created customized offerings that map to each of them.

Employee Engagement

We believe that strong communication is key in our Conscious Culture. This communication includes regular, virtual all hands, which we refer to as a "Cisco Check-In," and weekly team leader check-ins, which we refer to as a "Team Space Check-In." Our regular virtual Cisco Check-Ins were initially launched with a focus on sharing medical information at the start of the COVID-19 pandemic. The Cisco Check-Ins have since evolved into a forum where we can discuss much more with our employees, from business updates to social justice to physical and mental health.

In fiscal 2023, we have seen a high level of employee engagement. For example, there were approximately 2.3 million Team Space Check-Ins by our employees in fiscal 2023, reflecting approximately 73,500 employees submitting Team Space Check-Ins. Employees also participate in our global Engagement Pulse Survey and the Real Deal Survey. These surveys allow our employees to provide confidential feedback on our culture, company strategy and trust in their direct leaders.

Purpose Report and ESG Reporting Hub

Additional information regarding Cisco's ESG initiatives and progress can be found in our annual Purpose Report and on our ESG Reporting Hub at https://www.cisco.com/c/m/en_us/about/csr/esg-hub.html. The contents of our Purpose Report, our ESG Reporting Hub and related supplemental information are not incorporated by reference into this Annual Report on Form 10-K or in any other report or document we file with the SEC.

Information about our Executive Officers

The following table shows the name, age, and position as of August 31, 2023 of each of our executive officers:

Name	Age	Position with the Company
Charles H. Robbins	57	Chair and Chief Executive Officer
R. Scott Herren	61	Executive Vice President and Chief Financial Officer
Maria Martinez	65	Executive Vice President and Chief Operating Officer
Jeff Sharritts	55	Executive Vice President and Chief Customer and Partner Officer
Deborah L. Stahlkopf	53	Executive Vice President and Chief Legal Officer

Mr. Robbins serves as our Chief Executive Officer since July 2015, as a member of the Board of Directors since May 2015, and as Chair of the Board since December 2017. Mr. Robbins joined Cisco in December 1997, from which time until March 2002 he held a number of managerial positions within Cisco's sales organization. Mr. Robbins was promoted to Vice President in March 2002, assuming leadership of Cisco's U.S. channel sales organization. Additionally, in July 2005, Mr. Robbins assumed leadership of Cisco's Canada channel sales organization. In December 2007, Mr. Robbins was promoted to Senior Vice President, U.S. Commercial, and, in August 2009 he was appointed Senior Vice President, U.S. Enterprise, Commercial and Canada. In July 2011, Mr. Robbins was named Senior Vice President, Americas. In October 2012, Mr. Robbins was promoted to Senior Vice President, Worldwide Field Operations, in which position he served until assuming the role of Chief Executive Officer. Mr. Robbins is also a member of the board of directors of BlackRock, Inc. (since 2017).

Mr. Herren joined Cisco in December 2020 and serves as our Executive Vice President and Chief Financial Officer. Prior to joining Cisco, Mr. Herren served as Senior Vice President and Chief Financial Officer of Autodesk, Inc. ("Autodesk") since November 2014. Prior to joining Autodesk, Mr. Herren served as Senior Vice President of Finance at Citrix Systems, Inc. ("Citrix") from September 2011 to October 2014, and in a variety of other leadership roles after joining Citrix in March 2000, including as Vice President and Managing Director for EMEA and Vice President and General Manager of Citrix's virtualization systems group. Before joining Citrix, Mr. Herren spent over 15 years in senior strategy and financial positions at FedEx Corporation and International Business Machines Corporation.

Ms. Martinez joined Cisco in April 2018 and served as our Executive Vice President and Chief Customer Experience Officer until her appointment as our Executive Vice President and Chief Operating Officer in March 2021. Prior to joining Cisco, Ms. Martinez served in a variety of senior executive roles at salesforce.com, inc. ("Salesforce"), including as President, Global Customer Success and Latin America from March 2016 to April 2018; President, Sales and Customer Success from February 2013 to March 2016; Executive Vice President and Chief Growth Officer from February 2012 to February 2013; and as Executive Vice President, Customers for Life from February 2010 to February 2012. Ms. Martinez's experience prior to Salesforce includes serving as Corporate Vice President of Worldwide Services at Microsoft Corporation ("Microsoft"), President and Chief Executive Officer of Embrace Networks, Inc., and various senior leadership roles at Motorola, Inc. and AT&T Inc./Bell Laboratories. Ms. Martinez is a member of the board of directors of McKesson Corporation (since 2019) and Cue Health Inc. (since 2021).

Mr. Sharritts joined Cisco in July 2000 and serves as our Executive Vice President and Chief Customer and Partner Officer. Previously, Mr. Sharritts served as Cisco's Senior Vice President, Americas Sales from July 2018 to May 2022, in which position he served until his current role. Mr. Sharritts also served as Cisco's Senior Vice President, U.S. Commercial Sales from December 2014 to July 2018. Additionally, Mr. Sharritts has held several other leadership positions in Cisco's Commercial, Public Sector, Service Provider, and Channels sales organizations from July 2000 to December 2014. Mr. Sharritts is a member of the board of directors of Mueller Water Products, Inc. (since 2021).

Ms. Stahlkopf joined Cisco in August 2021 and serves as our Executive Vice President and Chief Legal Officer. Prior to joining Cisco, Ms. Stahlkopf spent 14 years at Microsoft, where she served most recently as Corporate Vice President, General Counsel and Corporate Secretary, Corporate, External and Legal Affairs from April 2018 to July 2021. Ms. Stahlkopf also served in other leadership roles at Microsoft, including as Vice President and Deputy General Counsel from December 2015 to April 2018 and as Associate General Counsel from December 2010 to December 2015. Prior to joining Microsoft, Ms. Stahlkopf practiced law at Perkins Coie LLP and Cooley Godward LLP. Ms. Stahlkopf is a member of the board of directors of NextEra Energy, Inc. (since 2023).

Item 1A. Risk Factors

Set forth below and elsewhere in this report and in other documents we file with the SEC are descriptions of the risks and uncertainties that could cause our actual results to differ materially from the results contemplated by the forward-looking statements contained in this report.

Risks Related to our Business and Industry

Our operating results may fluctuate in future periods, which may adversely affect our stock price.

Our operating results have been in the past, and will continue to be, subject to quarterly and annual fluctuations as a result of numerous factors, some of which may contribute to more pronounced fluctuations in an uncertain global economic environment. These factors include:

- Fluctuations in demand for our products and services, especially with respect to service providers and Internet businesses, in part due to changes in the global economic environment
- Changes in sales and implementation cycles for our products and reduced visibility into our customers' spending plans and associated revenue
- Our ability to maintain appropriate inventory levels and purchase commitments
- Price and product competition in the communications and networking industries, which can change rapidly due to technological innovation and different business models from various geographic regions
- The overall movement toward industry consolidation among both our competitors and our customers
- The introduction and market acceptance of new technologies and products, and our success in new and evolving markets, and in emerging technologies, as well as the adoption of new standards
- The transformation of our business to deliver more software and subscription offerings where revenue is recognized over time
- Variations in sales channels, product costs, mix of products sold, or mix of direct sales and indirect sales
- The timing, size, and mix of orders from customers
- Manufacturing and customer lead times
- Fluctuations in our gross margins, and the factors that contribute to such fluctuations
- The ability of our customers, channel partners, contract manufacturers and suppliers to obtain financing or to fund capital expenditures, especially during a period of global credit market disruption or in the event of customer, channel partner, contract manufacturer or supplier financial problems
- Actual events, circumstances, outcomes, and amounts differing from judgments, assumptions, and estimates used in determining the values of certain assets (including the amounts of related valuation allowances), liabilities, and other items reflected in our Consolidated Financial Statements
- How well we execute on our strategy and operating plans and the impact of changes in our business model that could result in significant restructuring charges
- Our ability to achieve targeted cost reductions
- Benefits anticipated from our investments
- Changes in tax laws or accounting rules, or interpretations thereof

As a consequence, operating results for a particular future period are difficult to predict, and, therefore, prior results are not necessarily indicative of results to be expected in future periods. Any of the foregoing factors, or any other factors discussed elsewhere herein, could have a material adverse effect on our business, results of operations, and financial condition that could adversely affect our stock price.

Our operating results may be adversely affected by unfavorable economic and market conditions and the uncertain geopolitical environment.

Challenging economic conditions, including rising inflation, or other changes, worldwide have from time to time contributed, and may continue to contribute, to slowdowns in the communications and networking industries at large, as well as in specific segments and markets in which we operate, resulting in: reduced demand for our products as a result of continued constraints on IT-related capital spending by our customers, particularly service providers, and other customer markets as well; increased price competition for our products, not only from our competitors but also as a consequence of customers disposing of unutilized products; risk of excess and obsolete inventories; risk of supply constraints; risk of excess facilities and manufacturing capacity; and higher overhead costs as a percentage of revenue and higher interest expense.

The global macroeconomic environment continues to be challenging and inconsistent. In certain prior periods, we have seen a broad-based weakening in the global macroeconomic environment which has impacted and could impact in the future certain of our markets. Additionally, instability in the global credit markets, the impact of uncertainty regarding global central bank monetary policy, the instability in the geopolitical environment in many parts of the world (including as a result of the on-going Russia and Ukraine war, and China-Taiwan relations), the current economic challenges in China, including global economic ramifications of Chinese economic difficulties, and other disruptions may continue to put pressure on global economic conditions. If global economic and market conditions, or economic conditions in key markets, remain uncertain or deteriorate further, we may experience material impacts on our business, operating results, and financial condition.

Our operating results in one or more segments may also be affected by uncertain or changing economic conditions particularly germane to that segment or to particular customer markets within that segment. In addition, reports of certain intelligence gathering methods of the U.S. government could affect customers' perception of the products of IT companies which design and manufacture products in the United States. Trust and confidence in us as an IT supplier are critical to the development and growth of our markets. Impairment of that trust, or foreign regulatory actions taken in response to reports of certain intelligence gathering methods of the U.S. government, could affect the demand for our products from customers outside of the United States and could have an adverse effect on our operating results.

Our revenue for a particular period is difficult to predict, and a shortfall in revenue may harm our operating results.

As a result of a variety of factors discussed in this report, our revenue for a particular quarter is difficult to predict, especially in light of a challenging and inconsistent global macroeconomic environment (including as a result of the on-going Russia and Ukraine war), and related market uncertainty. Our revenue may grow at a slower rate than in past periods, or decline as it did in certain prior periods. Our ability to meet financial expectations could also be adversely affected if the nonlinear sales pattern seen in some of our past quarters recurs in future periods. We have experienced periods of time during which shipments have exceeded net bookings or manufacturing issues have delayed shipments, leading to nonlinearity in shipping patterns. In addition to making it difficult to predict revenue for a particular period, nonlinearity in shipping can increase costs, because irregular shipment patterns result in periods of underutilized capacity and periods in which overtime expenses may be incurred, as well as in potential additional inventory management-related costs. In addition, to the extent that manufacturing issues and any related component shortages result in delayed shipments in the future, and particularly in periods in which our contract manufacturers are operating at higher levels of capacity, it is possible that revenue for a quarter could be adversely affected if such matters occur and are not remediated within the same quarter.

The timing of large orders can also have a significant effect on our business and operating results from quarter to quarter. 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 revenue. 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. Longer than normal manufacturing lead times in the past have caused, and in the future could cause, some customers to place the same or a similar order multiple times within our various sales channels and to cancel the duplicative orders upon shipment or receipt of the product, or to also place orders with other vendors with shorter manufacturing lead times. Such multiple ordering (along with other factors) or risk of order cancellation may cause difficulty in predicting our revenue. Further, our efforts to improve manufacturing lead-time performance may result in more variability and less predictability in our revenue and operating results. In addition, when facing component supply-related challenges, we have increased our efforts in procuring components in order to meet customer expectations, which in turn contribute to an increase in inventory and purchase commitments. In prior periods, we increased our inventory and purchase commitments in light of the significant supply constraints seen industry-wide due to component shortages. These increases in our inventory and purchase commitments to shorten lead times could also lead to material excess and obsolete inventory charges or other negative impacts to our product gross margin in future periods if product demand significantly weakens for a sustained duration. We plan our operating expense levels based primarily on forecasted revenue levels. These expenses and the impact of long-term commitments are relatively fixed in the short term. A shortfall in revenue could lead to operating results being below expectations because we may not be able to quickly reduce these fixed expenses in response to short-term business changes. Any of the above factors could have a material adverse impact on our operations and financial results. For additional information and a further discussion of impacts and risks related to our supply constraints, inventory commitments and our purchase commitments with contract manufacturers and suppliers, see Results of Operations—Product Gross Margin—Supply Constraints Impacts and Risks, Liquidity and Capital Resources—Inventory Supply Chain and Note 14 to the Consolidated Financial Statements.

Supply chain issues, including financial problems of contract manufacturers or component suppliers, or a shortage of adequate component supply or manufacturing capacity that increase our costs or cause a delay in our ability to fulfill orders, could have an adverse impact on our business and operating results, and our failure to estimate customer demand properly may result in excess or obsolete component supply, which could adversely affect our gross margins.

The fact that we do not own or operate the bulk of our manufacturing facilities and that we are reliant on our extended supply chain could have an adverse impact on the supply of our products and on our business and operating results. Financial problems of either contract manufacturers or component suppliers, reservation of manufacturing capacity at our contract manufacturers by other companies, and industry consolidation occurring within one or more component supplier markets, such as the semiconductor market, in each case, could either limit supply or increase costs.

A reduction or interruption in supply, including disruptions on our global supply chain, caused in part by public health emergencies, geopolitical tensions (including as a result of China-Taiwan relations) or a significant natural disaster (including as a result of climate change); a significant increase in the price of one or more components (including as a result of inflation); a failure to adequately authorize procurement of inventory by our contract manufacturers; a failure to appropriately cancel, reschedule, or adjust our requirements based on our business needs; or a decrease in demand for our products could materially adversely affect our business, operating results, and financial condition and could materially damage customer relationships. Furthermore, as a result of binding price or purchase commitments with suppliers, we may be obligated to purchase components at prices that are higher than those available in the current market. In the event that we become committed to purchase components at prices in excess of the current market price when the components are actually used, our gross margins could decrease. In addition, vendors may be under pressure to allocate product to certain customers for business, regulatory or political reasons, and/or demand changes in agreed pricing as a condition of supply. Although we have generally secured additional supply or taken other mitigation actions when significant disruptions have occurred, if similar situations occur in the future, they could have a material adverse effect on our business, results of operations, and financial condition.

Our growth and ability to meet customer demands depend in part on our ability to obtain timely deliveries of parts from our suppliers and contract manufacturers. We have experienced component shortages in the past, including shortages caused by manufacturing process issues, that have affected our operations, including longer than normal lead times. For example, in recent periods, there was a market shortage of semiconductor and other component supply which affected lead times, the cost of that supply, and our ability to meet customer demand for our products. While supply constraints remain, we saw an overall improvement of such constraints in fiscal 2023. Additionally, we may in the future experience a shortage of certain component parts as a result of our own manufacturing issues, manufacturing issues at our suppliers or contract manufacturers, capacity problems experienced by our suppliers or contract manufacturers including capacity or cost problems resulting from industry consolidation, or strong demand for those parts. Growth in the economy is likely to create greater pressures on us and our suppliers to accurately project overall component demand and component demands within specific product categories and to establish optimal component levels and manufacturing capacity, especially for labor-intensive components, components for which we purchase a substantial portion of the supply, or the re-ramping of manufacturing capacity for highly complex products. During periods of shortages or delays the price of components may increase, or the components may not be available at all, and we may also encounter shortages if we do not accurately anticipate our needs. We may not be able to secure enough components at reasonable prices or of acceptable quality to build new products in a timely manner in the quantities or configurations needed. Accordingly, our revenue and gross margins could suffer until other sources can be developed.

Our operating results would also be adversely affected if, anticipating greater demand than actually develops, we commit to the purchase of more components than we need, which is more likely to occur during periods of demand uncertainties such as we have experienced in recent periods and expect to continue to experience over the short- and medium-term. Although in many cases we use standard parts and components for our products, certain components are presently available only from a single source or limited sources, and a global economic downturn and related market uncertainty could negatively impact the availability of components from one or more of these sources, especially during times such as we have recently seen when there are supplier constraints based on labor and other actions taken during economic downturns. We may not be able to diversify sources in a timely manner, which could harm our ability to deliver products to customers and seriously impact present and future sales.

We believe that we may be faced with the following challenges in the future: new markets in which we participate may grow quickly, which may make it difficult to quickly obtain significant component capacity; as we acquire companies and new technologies, we may be dependent on unfamiliar supply chains or relatively small supply partners; and we face competition for certain components that are supply-constrained, from existing competitors, and companies in other markets.

Manufacturing capacity and component supply constraints could continue to be significant issues for us. We purchase components from a variety of suppliers and use several contract manufacturers to provide manufacturing services for our products. During the normal course of business, in order to improve manufacturing lead-time performance and to help ensure adequate component supply, we enter into agreements with contract manufacturers and suppliers that either allow them to procure inventory based upon criteria as defined by us or that establish the parameters defining our requirements. In certain instances, these agreements allow us the option to cancel, reschedule, and adjust our requirements based on our business needs prior to firm orders being placed. When facing component supply-related challenges we have increased our efforts in procuring components in order to meet customer expectations, which in turn contributes to an increase in inventory and purchase commitments. In past periods, we increased our inventory and purchase commitments in light of the supply constraints seen industry-wide due to component shortages. These increases in our inventory and purchase commitments to shorten lead times could also lead to material excess and obsolete inventory charges or other negative impacts to our product gross margin in future periods if we fail to anticipate customer demand properly and product demand significantly weakens for a sustained duration. For additional information and a further discussion of impacts and risks related to our supply constraints, inventory commitments and our purchase commitments with contract manufacturers and suppliers, see Results of Operations—Product Gross Margin—Supply Constraints Impacts and Risks, Liquidity and Capital Resources—Inventory Supply Chain and Note 14 to the Consolidated Financial Statements.

We expect gross margin to vary over time, and our level of product gross margin may not be sustainable.

Although our product gross margin increased in fiscal 2023, our level of product gross margins declined in fiscal 2022 and have declined in certain prior periods on a year-over-year basis, and could decline in future periods due to adverse impacts from various factors, including:

- Changes in customer, geographic, or product mix, including mix of configurations within each product group
- Introduction of new products, including products with price-performance advantages, and new business models including the transformation of our business to deliver more software and subscription offerings
- Our ability to reduce production costs
- Entry into new markets or growth in lower margin markets, including markets with different pricing and cost structures, through acquisitions or internal development
- Sales discounts
- Increases in material, labor or other manufacturing-related costs (i.e. component costs, broker fees, expedited freight and overtime) or higher supply chain logistics costs, any of which could be significant, especially during periods of supply constraints for certain costs, such as those that have impacted the market for components, including semiconductors and memory in past periods, and which costs have in the past and may continue to be exacerbated by inflation
- Excess inventory, inventory holding charges, and obsolescence charges
- Changes in shipment volume
- The timing of revenue recognition and revenue deferrals
- Increased costs (including those caused by tariffs or economic conditions, including inflation), loss of cost savings or dilution of savings due to changes in component pricing or charges incurred due to inventory holding periods if parts ordering does not correctly anticipate product demand or if the financial health of either contract manufacturers or suppliers deteriorates
- Lower than expected benefits from value engineering
- Increased price competition, including competitors from Asia, especially from China
- Changes in distribution channels
- Increased warranty or royalty costs
- Increased amortization of purchased intangible assets, especially from acquisitions
- How well we execute on our strategy and operating plans

Changes in service gross margin may result from various factors such as changes in the mix between technical support services and advanced services, as well as the timing of technical support service contract initiations and renewals and the addition of personnel and other resources to support higher levels of service business in future periods.

Sales to the service provider market are especially volatile, and weakness in orders from this industry may harm our operating results and financial condition.

Sales to the service provider market have been characterized by large and sporadic purchases, especially relating to our router sales and sales of certain other Secure, Agile Networks and Collaboration products, in addition to longer sales cycles. Service provider product orders significantly decreased during fiscal 2023 and we have experienced similar weakness in certain prior periods. Product orders from the service provider market could continue to decline and, as has been the case in the past, such weakness could persist over extended periods of time given fluctuating market conditions. Sales activity in this industry depends upon the stage of completion of expanding network infrastructures; the availability of funding; and the extent to which service providers are affected by regulatory, economic, and business conditions in the country of operations. Weakness in orders from this industry, including as a result of any slowdown in capital expenditures by service providers (which may be more prevalent during a global economic downturn, or periods of economic, political or regulatory uncertainty), could have a material adverse effect on our business, operating results, and financial condition. Such slowdowns may continue or recur in future periods. Orders from this industry could decline for many reasons other than the competitiveness of our products and services within their respective markets. For example, in the past, many of our service provider customers have been materially and adversely affected by slowdowns in the general economy, by overcapacity, by changes in the service provider market, by regulatory developments, and by constraints on capital availability, resulting in business failures and substantial reductions in spending and expansion plans. These conditions have materially harmed our business and operating results in the past, and could affect our business and operating results in any future period. Finally, service provider customers typically have longer implementation cycles; require a broader range of services, including design services; demand that vendors take on a larger share of risks; often require acceptance provisions, which can lead to a delay in revenue recognition; and expect financing from vendors. All these factors can add further risk to business conducted with service providers.

Disruption of or changes in our distribution model could harm our sales and margins.

If we fail to manage distribution of our products and services properly, or if our distributors' financial condition or operations weaken, our revenue and gross margins could be adversely affected. A substantial portion of our products and services is sold through our channel partners, and the remainder is sold through direct sales. Our channel partners include systems integrators, service providers, other third-party resellers, and distributors. Systems integrators and service providers typically sell directly to end users and often provide system installation, technical support, professional services, and other support services in addition to network equipment sales. Systems integrators also typically integrate our products into an overall solution, and a number of service providers are also systems integrators. Distributors stock inventory and typically sell to systems integrators, service providers, and other third-party resellers. We refer to sales through distributors as our two-tier system of sales to the end customer. If sales through indirect channels increase, this may lead to greater difficulty in forecasting the mix of our products and, to a degree, the timing of orders from our customers.

Historically, we have seen fluctuations in our gross margins based on changes in the balance of our distribution channels. There can be no assurance that changes in the balance of our distribution model in future periods would not have an adverse effect on our gross margins and profitability. Some factors could result in disruption of or changes in our distribution model, which could harm our sales and margins, including the following: competition with some of our channel partners, including through our direct sales, which may lead these channel partners to use other suppliers that do not directly sell their own products or otherwise compete with them; some of our channel partners may demand that we absorb a greater share of the risks that their customers may ask them to bear; some of our channel partners may have insufficient financial resources and may not be able to withstand changes and challenges in business conditions; and revenue from indirect sales could suffer if our distributors' financial condition or operations weaken. In addition, we depend on our channel partners globally to comply with applicable regulatory requirements. To the extent that they fail to do so, that could have a material adverse effect on our business, operating results, and financial condition. Further, sales of our products outside of agreed territories can result in disruption to our distribution channels.

The markets in which we compete are intensely competitive, which could adversely affect our achievement of revenue growth.

The markets in which we compete are characterized by rapid change, converging technologies, and a migration to networking and communications solutions that offer relative advantages. These market factors represent a competitive threat to us. We compete with numerous vendors in each product category. The overall number of our competitors providing niche product solutions may increase. Also, the identity and composition of competitors may change as we increase our activity in newer product areas, and in key priority and growth areas. For example, as products related to network programmability, such as software defined networking (SDN) products, have become more prevalent, we have faced increased competition from companies that develop networking products based on commoditized hardware, referred to as "white box" hardware, to the extent customers decide to purchase those product offerings instead of ours. In addition, the growth in demand for technology delivered as a service enables new competitors to enter the market. As we continue to expand globally, we may see new competition in different geographic regions. In particular, we have experienced price-focused competition from competitors in Asia, especially from China, and we anticipate this will continue. For information regarding our competitors, see the section entitled "Competition" contained in *Item 1. Business* of this report.

Some of our competitors compete across many of our product lines, while others are primarily focused in a specific product area. Barriers to entry are relatively low, and new ventures to create products that do or could compete with our products are regularly formed. In addition, some of our competitors may have greater resources, including technical and engineering resources, than we do. As we expand into new markets, we will face competition not only from our existing competitors but also from other competitors, including existing companies with strong technological, marketing, and sales positions in those markets. We also sometimes face competition from resellers and distributors of our products. Companies with which we have strategic alliances in some areas may be competitors in other areas, and this trend may increase. For example, the enterprise data center is undergoing a fundamental transformation arising from the convergence of technologies, including computing, networking, storage, and software, that previously were segregated. Due to several factors, including the availability of highly scalable and general purpose microprocessors, ASICs offering advanced services, standards based protocols, cloud computing and virtualization, the convergence of technologies within the enterprise data center is spanning multiple, previously independent, technology segments. Also, some of our current and potential competitors for enterprise data center business have made acquisitions, or announced new strategic alliances, designed to position them to provide end-to-end technology solutions for the enterprise data center. As a result of all of these developments, we face greater competition in the development and sale of enterprise data center technologies, including competition from entities that are among our long-term strategic alliance partners. Companies that are strategic alliance partners in some areas of our business may acquire or form alliances with our competitors, thereby reducing their business with us.

The principal competitive factors in the markets in which we presently compete and may compete in the future include the ability to sell successful business outcomes; the ability to provide a broad range of networking and communications products and services; product performance; price; the ability to introduce new products, including providing continuous new customer value and products with price-performance advantages; the ability to reduce production costs; the ability to provide value-added features such as security, reliability, and investment protection; conformance to standards; market presence; the ability to provide financing; and disruptive technology shifts and new business models.

We also face competition from customers to which we license or supply technology and suppliers from which we transfer technology. The inherent nature of networking requires interoperability. As such, we must cooperate and at the same time compete with many companies. Any inability to effectively manage these complicated relationships with customers, suppliers, and strategic alliance partners could have a material adverse effect on our business, operating results, and financial condition and accordingly affect our chances of success.

If we do not successfully manage our strategic alliances, we may not realize the expected benefits from such alliances, and we may experience increased competition or delays in product development.

We have several strategic alliances with large and complex organizations and other companies with which we work to offer complementary products and services. These arrangements are generally limited to specific projects, the goal of which is generally to facilitate product compatibility and adoption of industry standards. There can be no assurance we will realize the expected benefits from these strategic alliances or from joint ventures. If successful, these relationships may be mutually beneficial and result in industry growth. However, alliances carry an element of risk because, in most cases, we must compete in some business areas with a company with which we have a strategic alliance and, at the same time, cooperate with that company in other business areas. Also, if these companies fail to perform or if these relationships fail to materialize as expected, we could suffer delays in product development or other operational difficulties. Joint ventures can be difficult to manage, given the potentially different interests of joint venture partners.

Inventory management relating to our sales to our two-tier distribution channel is complex, and excess inventory may harm our gross margins.

We must manage inventory relating to sales to our distributors effectively, because inventory held by them could affect our results of operations. Our distributors may increase orders during periods of product shortages, cancel orders if their inventory is too high, or delay orders in anticipation of new products. They also may adjust their orders in response to the supply of our products and the products of our competitors that are available to them, and in response to seasonal fluctuations in end-user demand. Our distributors are generally given business terms that allow them to return a portion of inventory, receive credits for changes in selling price, and participate in various cooperative marketing programs. Inventory management remains an area of focus as we balance the need to maintain strategic inventory levels to ensure competitive lead times against the risk of inventory obsolescence because of rapidly changing technology and customer requirements. When facing component supply-related challenges, we have increased our efforts in procuring components in order to meet customer expectations. If we ultimately determine that we have excess inventory, we may have to reduce our prices and write down inventory, which in turn could result in lower gross margins.

We depend upon the development of new products and services, and enhancements to existing products and services, and if we fail to predict and respond to emerging technological trends and customers' changing needs, our operating results and market share may suffer.

The markets for our products and services are characterized by rapidly changing technology, evolving industry standards, new product and service introductions, and evolving methods of building and operating networks. Our operating results depend on our ability to develop and introduce new products and services into existing and emerging markets and to reduce the production costs of existing products. If customers do not purchase and/or renew our offerings our business could be harmed.

The process of developing new technology, including more programmable, flexible and virtual networks, and technology related to other market transitions— such as security, digital transformation and IoT, and cloud— is complex and uncertain, and if we fail to accurately predict customers' changing needs and emerging technological trends our business could be harmed. We must commit significant resources, including the investments we have been making in our strategic priorities to developing new products and services before knowing whether our investments will result in products and services the market will accept. In particular, if our model of the evolution of networking does not emerge as we believe it will, or if the industry does not evolve as we believe it will, or if our strategy for addressing this evolution is not successful, many of our strategic initiatives and investments may be of no or limited value. For example, if we do not introduce products related to network programmability, such as software-defined-networking products, in a timely fashion, or if product offerings in this market that ultimately succeed are based on technology, or an approach to technology, that differs from ours, such as, for example, networking products based on "white box" hardware, our business could be harmed. Similarly, our business could be harmed if we fail to develop, or fail to develop in a timely fashion, offerings to address other transitions, or if the offerings addressing these other transitions that ultimately succeed are based on technology, or an approach to technology, different from ours. In addition, our business could be adversely affected in periods surrounding our new product introductions if customers delay purchasing decisions to qualify or otherwise evaluate the new product offerings. We have also been transforming our business to move from selling individual products and services to selling products and services integrated into architectures and solutions, and we are seeking to meet the evolving needs of customers which include offering our products and solutions in the manner in which customers wish to consume them. As a part of this transformation, we continue to make changes to how we are organized and how we build and deliver our technology, including changes in our business models with customers. If our strategy for addressing our customer needs, or the architectures and solutions we develop do not meet those needs, or the changes we are making in how we are organized and how we build and deliver or technology is incorrect or ineffective, our business could be harmed.

Furthermore, we may not execute successfully on our vision or strategy because of challenges with regard to product planning and timing, technical hurdles that we fail to overcome in a timely fashion, or a lack of appropriate resources. This could result in competitors, some of which may also be our strategic alliance partners, providing those solutions before we do and loss of market share, revenue, and earnings. In addition, the growth in demand for technology delivered as a service enables new competitors to enter the market. The success of new products and services depends on several factors, including proper new product and service definition, component costs, timely completion and introduction of these products and services, differentiation of new products and services from those of our competitors, and market acceptance of these products and services. There can be no assurance that we will successfully identify new product and services opportunities, develop and bring new products and services to market in a timely manner, or achieve market acceptance of our products and services or that products, services and technologies developed by others will not render our products, services or technologies obsolete or noncompetitive. The products and technologies in our other product categories and key priority and growth areas may not prove to have the market success we anticipate, and we may not successfully identify and invest in other emerging or new products and services.

Changes in industry structure and market conditions could lead to charges related to discontinuances of certain of our products or businesses, asset impairments and workforce reductions or restructurings.

In response to changes in industry and market conditions, we may be required to strategically realign our resources and to consider restructuring, disposing of, or otherwise exiting businesses. Any resource realignment, or decision to limit investment in or dispose of or otherwise exit businesses, may result in the recording of special charges, such as inventory and technology-related write-offs, workforce reduction or restructuring costs, charges relating to consolidation of excess facilities, or claims from third parties who were resellers or users of discontinued products. Our estimates with respect to the useful life or ultimate recoverability of our carrying basis of assets, including purchased intangible assets, could change as a result of such assessments and decisions. Although in certain instances our supply agreements allow us the option to cancel, reschedule, and adjust our requirements based on our business needs prior to firm orders being placed, our loss contingencies may include liabilities for contracts that we cannot cancel with contract manufacturers and suppliers. Further, our estimates relating to the liabilities for excess facilities are affected by changes in real estate market conditions. Additionally, we are required to perform goodwill impairment tests on an annual basis and between annual tests in certain circumstances, and future goodwill impairment tests may result in a charge to earnings. We initiated a restructuring plan in the second quarter of fiscal 2023, for which we expect such plan to be substantially completed by the end of the first quarter of fiscal 2024. Our business may not be more efficient or effective than prior to implementation of the plan. Our restructuring activities, including any related charges and the impact of the related headcount restructurings, could have a material adverse effect on our business, operating results, and financial condition.

Over the long term we intend to invest in engineering, sales, service and marketing activities, and in key priority and growth areas, and these investments may achieve delayed, or lower than expected, benefits which could harm our operating results.

While we intend to focus on managing our costs and expenses, over the long term, we also intend to invest in personnel and other resources related to our engineering, sales, service and marketing functions as we realign and dedicate resources on key priority and growth areas. We also intend to focus on maintaining leadership in core networking and services. We are likely to recognize the costs associated with these investments earlier than some of the anticipated benefits, and the return on these investments may be lower, or may develop more slowly, than we expect. If we do not achieve the benefits anticipated from these investments (including if our selection of areas for investment does not play out as we expect), or if the achievement of these benefits is delayed, our operating results may be adversely affected.

We have made and expect to continue to make acquisitions that could disrupt our operations and harm our operating results.

Our growth depends upon market growth, our ability to enhance our existing products, and our ability to introduce new products on a timely basis. We intend to continue to address the need to develop new products and enhance existing products through acquisitions of other companies, product lines, technologies, and personnel. Acquisitions involve numerous risks, including the following:

- Difficulties or delays in integrating the operations (including IT security), systems, technologies, products, and personnel of the acquired companies, particularly with companies that have large and widespread operations and/or complex products
- Diversion of management’s attention from normal daily operations of the business and the challenges of managing larger and more widespread operations resulting from acquisitions
- Potential difficulties in completing projects associated with in-process research and development intangibles
- Difficulties in entering markets in which we have no or limited direct prior experience and where competitors in such markets have stronger market positions
- Initial dependence on unfamiliar supply chains or relatively small supply partners
- Insufficient revenue to offset increased expenses associated with acquisitions
- The potential loss of key employees, customers, distributors, vendors and other business partners of the companies we acquire following and continuing after announcement of acquisition plans

Acquisitions may also cause us to:

- Issue common stock that would dilute our current stockholders’ percentage ownership
- Use a substantial portion of our cash resources, or incur debt
- Significantly increase our interest expense, leverage and debt service requirements if we incur additional debt to pay for an acquisition
- Assume liabilities
- Record goodwill and intangible assets that are subject to impairment testing on a regular basis and potential periodic impairment charges
- Incur amortization expenses related to certain intangible assets
- Incur tax expenses related to the effect of acquisitions on our legal structure
- Incur large write-offs and restructuring and other related expenses
- Become subject to intellectual property or other litigation

Mergers and acquisitions of high-technology companies are inherently risky and subject to many factors outside of our control, and no assurance can be given that our previous or future acquisitions will be successful and will not materially adversely affect our business, operating results, or financial condition. Failure to manage and successfully integrate acquisitions could materially harm our business and operating results. Prior acquisitions have resulted in a wide range of outcomes, from successful introduction of new products and technologies to a failure to do so. Even when an acquired company has already developed and marketed products, there can be no assurance that product enhancements will be made in a timely fashion or that pre-acquisition due diligence will have identified all possible issues that might arise with respect to such products. In addition, our effective tax rate for future periods is uncertain and could be impacted by mergers and acquisitions. Risks related to new product development also apply to acquisitions.

Entrance into new or developing markets exposes us to additional competition and will likely increase demands on our service and support operations.

As we focus on new market opportunities and key priority and growth areas, we compete with large telecommunications and other equipment suppliers as well as startup companies. Several of our competitors may have greater resources, including technical and engineering resources, than we do. Additionally, as customers in these markets complete infrastructure deployments, they may require greater levels of service, support, and financing than we have provided in the past, especially in emerging countries. Demand for these types of service, support, or financing contracts may increase in the future. There can be no assurance that we can provide products, service, support, and financing to effectively compete for these market opportunities. Further, entry into other markets has subjected and will subject us to additional risks, particularly to those markets, including the effects of general market conditions and reduced consumer confidence. For example, as we add direct selling capabilities globally to meet changing customer demands, we will face increased legal and regulatory requirements.

Product quality problems could lead to reduced revenue, gross margins, and net income.

We produce highly complex products that incorporate leading-edge technology, including both hardware and software. Software typically contains bugs that can unexpectedly interfere with expected operations. There can be no assurance that our pre-shipment testing programs will be adequate to detect all defects, either ones in individual products or ones that could affect numerous shipments, which might interfere with customer satisfaction, reduce sales opportunities, or affect gross margins. From time to time, we have had to replace certain components and provide remediation in response to the discovery of defects or bugs in products that we had shipped. There can be no assurance that such remediation, depending on the product involved, would not have a material impact. An inability to cure a product defect could result in the failure of a product line, temporary or permanent withdrawal from a product or market, damage to our reputation, inventory costs, or product reengineering expenses, any of which could have a material impact on our revenue, margins, and net income.

Due to the global nature of our operations, political or economic changes or other factors in a specific country or region could harm our operating results and financial condition.

We conduct significant sales and customer support operations in countries around the world. As such, our growth depends in part on our increasing sales into emerging countries. We also depend on non-U.S. operations of our contract manufacturers, component suppliers and distribution partners. Our business in emerging countries in the aggregate experienced a decline in orders in certain prior periods. We continue to assess the sustainability of any improvements in our business in these countries and there can be no assurance that our investments in these countries will be successful. Our future results could be materially adversely affected by a variety of political, economic or other factors relating to our operations inside and outside the United States, any or all of which could have a material adverse effect on our operating results and financial condition, including the following: impacts from global central bank monetary policy; issues related to the political relationship between the United States and other countries that can affect regulatory matters, affect the willingness of customers in those countries to purchase products from companies headquartered in the United States or affect our ability to procure components if a government body were to deny us access to those components; government-related disruptions or shutdowns; the challenging and inconsistent global macroeconomic environment; foreign currency exchange rates; geopolitical tensions (including China-Taiwan relations); political or social unrest; economic instability or weakness or natural disasters in a specific country or region, including economic challenges in China and global economic ramifications of Chinese economic difficulties; environmental protection regulations (including new laws and regulations related to climate change); trade protection measures such as tariffs, and other legal and regulatory requirements, some of which may affect our ability to import our products to, export our products from, or sell our products in various countries or affect our ability to procure components; political considerations that affect service provider and government spending patterns; health or similar issues, including pandemics or epidemics; difficulties in staffing and managing international operations; and adverse tax consequences, including imposition of withholding or other taxes on our global operations.

Issues related to the development and use of artificial intelligence (AI) could give rise to legal and/or regulatory action, damage our reputation or otherwise materially harm of our business.

We currently incorporate AI technology in certain of our products and services and in our business operations. Our research and development of such technology remains ongoing. AI presents risks, challenges, and unintended consequences that could affect our and our customers' adoption and use of this technology. AI algorithms and training methodologies may be flawed. Additionally, AI technologies are complex and rapidly evolving, and we face significant competition in the market and from other companies regarding such technologies. While we aim to develop and use AI responsibly and attempt to identify and mitigate ethical and legal issues presented by its use, we may be unsuccessful in identifying or resolving issues before they arise. AI-related issues, deficiencies and/or failures could (i) give rise to legal and/or regulatory action, including with respect to proposed legislation regulating AI in jurisdictions such as the European Union and others, and as a result of new applications of existing data protection, privacy, intellectual property, and other laws; (ii) damage our reputation; or (iii) otherwise materially harm our business.

We are exposed to the credit risk of some of our customers and to credit exposures in weakened markets, which could result in material losses.

Most of our sales are on an open credit basis, with typical payment terms of 30 days in the United States, and, because of local customs or conditions, longer in some markets outside the United States. Beyond our open credit arrangements, we have also experienced demands for customer financing and facilitation of leasing arrangements. Our loan financing arrangements may include not only financing the acquisition of our products and services but also providing additional funds for other costs associated with network installation and integration of our products and services. Our exposure to the credit risks relating to our financing activities may increase if our customers are adversely affected by a global economic downturn or periods of economic uncertainty. There can be no assurance that programs we have in place to monitor and mitigate credit risks will be effective. In the past, there have been significant bankruptcies among customers both on open credit and with loan or lease financing arrangements, particularly among Internet businesses and service providers, causing us to incur economic or financial losses. There can be no assurance that additional losses will not be incurred. Although these losses have not been material to date, future losses, if incurred, could harm our business and have a material adverse effect on our operating results and financial condition. Additionally, to the degree that turmoil in the credit markets makes it more difficult for some customers to obtain financing, those customers’ ability to pay could be adversely impacted, which in turn could have a material adverse impact on our business, operating results, and financial condition.

We are exposed to fluctuations in the market values of our portfolio investments and in interest rates; impairment of our investments could harm our earnings.

We maintain an investment portfolio of various holdings, types, and maturities. Our portfolio includes available-for-sale debt investments and equity investments, the values of which are subject to market price volatility. If such investments suffer market price declines, as we experienced with some of our investments in the past, we may recognize in earnings the decline in the fair value of our investments below their cost basis. Our privately held investments are subject to risk of loss of investment capital. These investments are inherently risky because the markets for the technologies or products they have under development are typically in the early stages and may never materialize. We could lose our entire investment in these companies. For information regarding the market risks associated with the fair value of portfolio investments and interest rates, refer to the section titled “Quantitative and Qualitative Disclosures About Market Risk.”

We are exposed to fluctuations in currency exchange rates that could negatively impact our financial results and cash flows.

Because a significant portion of our business is conducted outside the United States, we face exposure to adverse movements in foreign currency exchange rates, including emerging market currencies which can have extreme currency volatility. An increase in the value of the dollar could increase the real cost to our customers of our products in those markets outside the United States where we sell in dollars and a weakened dollar could increase the cost of local operating expenses and procurement of raw materials to the extent that we must purchase components in foreign currencies. These exposures may change over time as business practices evolve, and they could have a material adverse impact on our financial results and cash flows.

Failure to retain and recruit key personnel would harm our ability to meet key objectives.

Our success has always depended in large part on our ability to attract and retain highly skilled technical, managerial, sales, and marketing personnel. Competition for such personnel is intense, especially in the Silicon Valley area of Northern California and other major United States locations. Stock incentive plans are designed to reward employees for their long-term contributions and provide incentives for them to remain with us. Volatility or lack of positive performance in our stock price or equity incentive awards, or changes to our overall compensation program, including our stock incentive program, resulting from the management of share dilution and share-based compensation expense or otherwise, may also adversely affect our ability to retain key employees. As a result of one or more of these factors, we may increase our hiring in geographic areas outside the United States, which could subject us to additional geopolitical and exchange rate risk. The loss of services of any of our key personnel; the inability to retain and attract qualified personnel in the future; or delays in hiring required personnel, particularly in engineering and sales fields, could make it difficult to meet key objectives, such as timely and effective product introductions. In addition, companies in our industry whose employees accept positions with competitors frequently claim that competitors have engaged in improper hiring practices. We have received these claims in the past and may receive additional claims to this effect in the future.

Adverse resolution of litigation or governmental investigations may harm our operating results or financial condition.

We are a party to lawsuits in the normal course of our business. Additionally, in connection with the Russia and Ukraine war and our decision to stop business operations and orderly wind down our business in Russia, there are existing claims and lawsuits in Russia, and the potential for future claims and lawsuits in Russia and/or Belarus, related to such decision and related trade restrictions and sanctions. In the event of an unfavorable resolution of any of these lawsuits, the potential outcome could include the seizure of our assets in Russia and/or Belarus, which, collectively, represents less than 0.1% of our total assets at the end of fiscal 2023. Litigation can be costly, lengthy, and disruptive to normal business operations. Moreover, the results of complex legal proceedings are difficult to predict. An unfavorable resolution of lawsuits or governmental investigations could have a material adverse effect on our business, operating results, or financial condition. For additional information regarding certain of the matters in which we are involved, see Note 14 to the Consolidated Financial Statements, subsection (f) “Legal Proceedings.”

Our operating results may be adversely affected and damage to our reputation may occur due to production and sale of counterfeit versions of our products.

As is the case with leading products around the world, our products are subject to efforts by third parties to produce counterfeit versions of our products. While we work diligently with law enforcement authorities in various countries to block the manufacture of counterfeit goods and to interdict their sale, and to detect counterfeit products in customer networks, and have succeeded in prosecuting counterfeiters and their distributors, resulting in fines, imprisonment and restitution to us, there can be no guarantee that such efforts will succeed. While counterfeiters often aim their sales at customers who might not have otherwise purchased our products due to lack of verifiability of origin and service, such counterfeit sales, to the extent they replace otherwise legitimate sales, could adversely affect our operating results.

Changes in our provision for income taxes or adverse outcomes resulting from examination of our income tax returns could adversely affect our results.

Our provision for income taxes is subject to volatility and could be adversely affected by earnings being lower than anticipated in countries that have lower tax rates and higher than anticipated in countries that have higher tax rates; by changes in the valuation of our deferred tax assets and liabilities; by changes to foreign-derived intangible income, global intangible low-tax income and base erosion and anti-abuse tax laws, regulations, or interpretations thereof; by expiration of or lapses in tax incentives; by transfer pricing adjustments, including the effect of acquisitions on our legal structure; by tax effects of nondeductible compensation; by tax costs related to intercompany realignments; by changes in accounting principles; or by changes in tax laws and regulations, treaties, or interpretations thereof, including changes to the taxation of earnings of our foreign subsidiaries, the deductibility of expenses attributable to foreign income, and the foreign tax credit rules. Significant judgment is required to determine the recognition and measurement attribute prescribed in the accounting guidance for uncertainty in income taxes. The Organisation for Economic Co-operation and Development (OECD), an international association comprised of 38 countries, including the United States, has made changes and is contemplating additional changes to numerous long-standing tax principles. There can be no assurance that these changes and any contemplated changes if finalized, once adopted by countries, will not have an adverse impact on our provision for income taxes. Further, as a result of certain of our ongoing employment and capital investment actions and commitments, our income in certain countries was subject to reduced tax rates. Our failure to meet these commitments could adversely impact our provision for income taxes. In addition, we are subject to the continuous examination of our income tax returns by the Internal Revenue Service (IRS) and other tax authorities. We regularly assess the likelihood of adverse outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. There can be no assurance that the outcomes from these continuous examinations will not have an adverse effect on our operating results and financial condition.

Our business and operations are especially subject to the risks of earthquakes, floods, and other natural catastrophic events (including as a result of global climate change).

Our corporate headquarters, including certain of our research and development operations are located in the Silicon Valley area of Northern California, a region known for seismic activity. Additionally, a certain number of our facilities are located near rivers that have experienced flooding in the past. Also certain of our customers, suppliers and logistics centers are located in regions that have been or may be affected by earthquake, tsunami and flooding or other weather-related activity which in the past has disrupted, and in the future could disrupt, the flow of supply chain components and delivery of products. In addition, global climate change may result in significant natural disasters occurring more frequently and/or with greater intensity, such as drought, wildfires, storms, sea-level rise, changing precipitation, and flooding. We have not to date experienced a material event as a result of these kinds of natural disasters; however, the occurrence of any such event in the future could have a material adverse impact on our business, operating results, and financial condition.

Terrorism, war, and other events may harm our business, operating results and financial condition.

The continued threat of terrorism and heightened security and military action in response thereto, or any other current or future acts of terrorism, war (such as the on-going Russia and Ukraine war), and other events (such as economic sanctions and trade restrictions, including those related to the on-going Russia and Ukraine war) may cause further disruptions to the economies of the United States and other countries and create further uncertainties or could otherwise negatively impact our business, operating results, and financial condition. Likewise, events such as loss of infrastructure and utilities services such as energy, transportation, or telecommunications could have similar negative impacts. To the extent that such disruptions or uncertainties result in delays or cancellations of customer orders or the manufacture or shipment of our products, our business, operating results, and financial condition could be materially and adversely affected.

There can be no assurance that our operating results and financial condition will not be adversely affected by our incurrence of debt.

As of the end of fiscal 2023, we have senior unsecured notes outstanding in an aggregate principal amount of $8.5 billion that mature at specific dates from calendar year 2023 through 2040. We have also established a commercial paper program under which we may issue short-term, unsecured commercial paper notes on a private placement basis up to a maximum aggregate amount outstanding at any time of $10.0 billion. We had no commercial paper notes outstanding under this program as of July 29, 2023. There can be no assurance that our incurrence of this debt or any future debt will be a better means of providing liquidity to us than would our use of our existing cash resources. Further, we cannot be assured that our maintenance of this indebtedness or incurrence of future indebtedness will not adversely affect our operating results or financial condition. In addition, changes by any rating agency to our credit rating can negatively impact the value and liquidity of both our debt and equity securities, as well as the terms upon which we may borrow under our commercial paper program or future debt issuances.

Our reputation and/or business could be negatively impacted by ESG matters and/or our reporting of such matters.

There is an increasing focus from regulators, certain investors, and other stakeholders concerning environmental, social, and governance ("ESG") matters, both in the United States and internationally. We communicate certain ESG-related initiatives, goals, and/or commitments regarding environmental matters, diversity and inclusion, responsible sourcing and social investments, and other matters, in our annual Purpose Report, on our website, in our filings with the SEC, and elsewhere. These initiatives, goals, or commitments could be difficult to achieve and costly to implement. For example, in September 2021, we announced our goal to achieve net zero across all scopes of greenhouse gas emissions by 2040, the achievement of which relies, in large part, on the accuracy of our estimates and assumptions around the enhanced power efficiency of our products, the adoption of renewable energy at customer and supplier sites, and the adoption of certain of our products and services by our customers. We could fail to achieve, or be perceived to fail to achieve, our 2040 net zero goal or other ESG-related initiatives, goals, or commitments. In addition, we could be criticized for the timing, scope or nature of these initiatives, goals, or commitments, or for any revisions to them. To the extent that our required and voluntary disclosures about ESG matters increase, we could be criticized for the accuracy, adequacy, or completeness of such disclosures. Our actual or perceived failure to achieve our ESG-related initiatives, goals, or commitments could negatively impact our reputation or otherwise materially harm our business.

Risks Related to Intellectual Property

Our proprietary rights may prove difficult to enforce.

We generally rely on patents, copyrights, trademarks, and trade secret laws to establish and maintain proprietary rights in our technology and products. Although we have been issued numerous patents and other patent applications are currently pending, there can be no assurance that any of these patents or other proprietary rights will not be challenged, invalidated, or circumvented or that our rights will, in fact, provide competitive advantages to us. Furthermore, many key aspects of networking technology are governed by industrywide standards, which are usable by all market entrants. In addition, there can be no assurance that patents will be issued from pending applications or that claims allowed on any patents will be sufficiently broad to protect our technology. In addition, the laws of some foreign countries may not protect our proprietary rights to the same extent as do the laws of the United States. The outcome of any actions taken in these foreign countries may be different than if such actions were determined under the laws of the United States. Although we are not dependent on any individual patents or group of patents for particular segments of the business for which we compete, if we are unable to protect our proprietary rights to the totality of the features (including aspects of products protected other than by patent rights) in a market, we may find ourselves at a competitive disadvantage to others who need not incur the substantial expense, time, and effort required to create innovative products that have enabled us to be successful.

We may be found to infringe on intellectual property rights of others.

Third parties, including customers, have in the past and may in the future assert claims or initiate litigation related to exclusive patent, copyright, trademark, and other intellectual property rights to technologies and related standards that are relevant to us. These assertions have increased over time as a result of our growth and the general increase in the pace of patent claims assertions, particularly in the United States. Because of the existence of a large number of patents in the networking field, the secrecy of some pending patents, and the rapid rate of issuance of new patents, it is not economically practical or even possible to determine in advance whether a product or any of its components infringes or will infringe on the patent rights of others. The asserted claims and/or initiated litigation can include claims against us or our manufacturers, suppliers, or customers, alleging infringement of their proprietary rights with respect to our existing or future products or components of those products. Regardless of the merit of these claims, they can be time-consuming, result in costly litigation and diversion of technical and management personnel, or require us to develop a non-infringing technology or enter into license agreements. Where claims are made by customers, resistance even to unmeritorious claims could damage customer relationships. There can be no assurance that licenses will be available on acceptable terms and conditions, if at all, or that our indemnification by our suppliers will be adequate to cover our costs if a claim were brought directly against us or our customers. Furthermore, because of the potential for high court awards that are not necessarily predictable, it is not unusual to find even arguably unmeritorious claims settled for significant amounts. If any infringement or other intellectual property claim made against us by any third party is successful, if we are required to indemnify a customer with respect to a claim against the customer, or if we fail to develop non-infringing technology or license the proprietary rights on commercially reasonable terms and conditions, our business, operating results, and financial condition could be materially and adversely affected. For additional information regarding our indemnification obligations, see Note 14(e) to the Consolidated Financial Statements contained in this report. Our exposure to risks associated with the use of intellectual property may be increased as a result of acquisitions, as we have a lower level of visibility into the development process with respect to such technology or the care taken to safeguard against infringement risks. Further, in the past, third parties have made infringement and similar claims after we have acquired technology that had not been asserted prior to our acquisition.

We rely on the availability of third-party licenses.

Many of our products are designed to include software or other intellectual property licensed from third parties. It may be necessary in the future to seek or renew licenses relating to various aspects of these products. There can be no assurance that the necessary licenses would be available on acceptable terms, if at all. The inability to obtain certain licenses or other rights or to obtain such licenses or rights on favorable terms, or the need to engage in litigation regarding these matters, could have a material adverse effect on our business, operating results, and financial condition. Moreover, the inclusion in our products of software or other intellectual property licensed from third parties on a nonexclusive basis could limit our ability to protect our proprietary rights in our products.

Risks Related to Cybersecurity, Privacy, and Regulatory Requirements

Cyber attacks, data breaches or other incidents may disrupt our operations, harm our operating results and financial condition, and damage our reputation or otherwise materially harm our business; and cyber attacks, data breaches or other incidents on our customers' or third-party providers' networks, or in cloud-based services provided to, by, or enabled by us, could result in claims of liability against us, give rise to legal and/or regulatory action, damage our reputation or otherwise materially harm our business.

We experience cyber attacks and other attempts to gain unauthorized access to our products, services, and IT environment on a regular basis, and we anticipate continuing to be subject to such attempts as cyber attacks become increasingly sophisticated and more difficult to predict and protect against. Despite our implementation of security measures, (i) our products and services, and (ii) the servers, data centers, and cloud-based solutions on which our and third-party data is stored or processed (including servers, data centers and cloud-based solutions operated by third parties on which we rely) (collectively, our "IT environment"), are vulnerable to cyber attacks, data breaches, malware, inadvertent error, disruptions, tampering or other theft or misuse, including by employees, contingent workers, malicious actors, or nation-states or their agents (which cyber attack or related activity may intensify during periods of diplomatic or armed conflict). Further, a cyber attack or other incident could go undetected and persist in our environments for extended periods. Cyber-related events have caused, and in the future could result in, compromise to, or the disruption of access to, the operation of our products, services, and IT environment or those of our customers or third-party providers we rely on, or result in confidential information stored on our systems, our customers' systems, or other third-party systems being improperly accessed, processed, disclosed now or in the future, or be lost or stolen. For example, in December 2021, multiple vulnerabilities were reported for the widely used Java logging library, Apache Log4j. We reviewed the use of this library within our products and services, its use in our enterprise IT environment, and its use by our third-party providers, and have taken steps to mitigate these vulnerabilities, including by providing security updates for affected products to our customers. We have not to date experienced a material event related to a cybersecurity matter; however, the occurrence of any such event in the future could subject us to liability to our customers, data subjects, suppliers, business partners, employees, and others, give rise to legal and/or regulatory action, could damage our reputation or could otherwise materially harm our business, any of which could have a material adverse effect on our business, operating results, and financial condition. Efforts to limit the ability of malicious actors to disrupt the operations of the Internet or undermine our own security efforts are costly to implement and may not be successful. Breaches of security in our customers' or third-party providers' networks, in third-party products we use, or in cloud-based services provided to, by, or enabled by us, regardless of whether the breach is attributable to a vulnerability in our products or services, or a failure to maintain the digital security infrastructure or security tools that protect the integrity of our products, services, and IT environment, could, in each case, result in claims of liability against us, damage our reputation or otherwise materially harm our business.

Vulnerabilities and critical security defects, prioritization decisions regarding remedying vulnerabilities or security defects, failure of third-party providers to remedy vulnerabilities or security defects, or customers not deploying security updates in a timely manner or deciding not to upgrade products, services or solutions could result in claims of liability against us, damage our reputation, or otherwise materially harm our business.

The products and services we sell to customers, and our cloud-based solutions, inevitably contain vulnerabilities or security defects which have not been remedied and cannot be disclosed without compromising security. We also make prioritization decisions in determining which vulnerabilities or security defects to fix and the timing of these fixes. Customers may also need to test security updates before they can be deployed which can delay implementation. When customers do not deploy security updates in a timely manner, or decide not to upgrade to the latest versions of our products, services or cloud-based solutions containing the security update, they may be left vulnerable. In addition, we rely on third-party providers of software and cloud-based services on which our and third-party data is stored or processed, and we cannot control the timing at which third-party providers remedy vulnerabilities, which could leave us vulnerable. Vulnerabilities and security defects, prioritization errors in remedying vulnerabilities or security defects, failure of third-party providers to remedy vulnerabilities or security defects, or customers not deploying security updates in a timely manner or deciding not to upgrade products, services or solutions could result in claims of liability against us, damage our reputation or otherwise materially harm our business.

Our actual or perceived failure to adequately protect personal data could result in claims of liability against us, damage our reputation or otherwise materially harm our business.

Global privacy and data protection-related laws and regulations are evolving, extensive, and complex. Compliance with these laws and regulations is difficult and costly. In addition, evolving legal requirements restricting or controlling the collection, processing, or cross-border transmission of data, including for regulation of cloud-based services, could materially affect our customers' ability to use, and our ability to sell, our products and services. The interpretation and application of these laws in some instances is uncertain, and our legal and regulatory obligations are subject to frequent changes. For example, the European Union's ("EU") General Data Protection Regulation ("GDPR") applies to our activities conducted from an establishment in the EU or related to products and services offered in the EU and imposes a range of compliance obligations regarding the handling of personal data. Additionally, we are subject to California's Consumer Privacy Act and other laws, regulations and obligations that relate to the handling of personal data. Our actual or perceived failure to comply with applicable laws and regulations or other obligations relating to personal data, or to protect personal data from unauthorized access, use, or other processing, could subject us to liability to our customers, data subjects, suppliers, business partners, employees, and others, give rise to legal and/or regulatory action, could damage our reputation or could otherwise materially harm our business, any of which could have a material adverse effect on our business, operating results, and financial condition.

Our business, operating results and financial condition could be materially harmed by evolving regulatory uncertainty or obligations applicable to our products and services.

Changes in regulatory requirements applicable to the industries and sectors in which we operate, in the United States and in other countries, could materially affect the sales of our products and services. In particular, economic sanctions and changes to export and import control requirements have impacted and may continue to impact our ability to sell and support our products and services in certain jurisdictions. In addition, changes in telecommunications regulations could impact our service provider customers' purchase of our products and services, and they could also impact sales of our own regulated offerings. Additional areas of uncertainty that could impact sales of our products and services include laws, regulations, or customer procurement requirements related to encryption technology, data, artificial intelligence, privacy, cybersecurity, environmental sustainability (including climate change), human rights, product certification, product accessibility, country of origin, and national security controls applicable to our supply chain. Changes in regulatory requirements in any of these areas or our actual or perceived failure to comply with applicable laws and regulations or other obligations relating to these areas could have a material adverse effect on our business, operating results, and financial condition.

Risks Related to Ownership of Our Stock

Our stock price may be volatile.

Historically, our common stock has experienced substantial price volatility, particularly as a result of variations between our actual financial results and the published expectations of analysts and as a result of announcements by our competitors and us. Furthermore, speculation in the press or investment community about our strategic position, financial condition, results of operations, business, security of our products, or significant transactions can cause changes in our stock price. In addition, the stock market has experienced extreme price and volume fluctuations that have affected the market price of many technology companies, in particular, and that have often been unrelated to the operating performance of these companies. These factors, as well as general economic and political conditions and the announcement of proposed and completed acquisitions or other significant transactions, or any difficulties associated with such transactions, by us or our current or potential competitors, may materially adversely affect the market price of our common stock in the future. Additionally, volatility, lack of positive performance in our stock price or changes to our overall compensation program, including our stock incentive program, may adversely affect our ability to retain key employees, virtually all of whom are compensated, in part, based on the performance of our stock price.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our corporate headquarters are located at an owned site in San Jose, California, in the United States of America. The locations of our headquarters by geographic segment are as follows:

Americas	EMEA	APJC
San Jose, California, USA	Amsterdam, Netherlands	Singapore

In addition to our headquarters site, we own additional sites in the United States, which include facilities in the surrounding areas of San Jose, California; Research Triangle Park, North Carolina; and Richardson, Texas. We also own land for expansion in some of these locations. In addition, we lease office space in many U.S. locations.

Outside the United States our operations are conducted primarily in leased sites. Other significant sites (in addition to the two non-U.S. headquarters locations) are located in Australia, Belgium, Canada, China, Germany, India, Israel, Japan, Poland, and the United Kingdom.

We believe that our existing facilities, including both owned and leased, are in good condition and suitable for the conduct of our business.

Item 3. Legal Proceedings

For a description of pending legal proceedings in which we are involved, see Note 14 “Commitments and Contingencies - (f) Legal Proceedings” of the Notes to Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K, which is incorporated herein by reference.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

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

(a) Cisco common stock is traded on the Nasdaq Global Select Market under the symbol CSCO. There were 33,809 registered stockholders as of September 1, 2023.

(b) None.

(c) Issuer purchases of equity securities (in millions, except per-share amounts):

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares That May Yet Be Purchased Under the Plans or Programs
April 30, 2023 to May 27, 2023	5	$ 47.88	5	$ 11,946
May 28, 2023 to June 24, 2023	9	$ 50.45	9	$ 11,513
June 25, 2023 to July 29, 2023	11	$ 51.69	11	$ 10,934
Total	25	$ 50.49	25	

On September 13, 2001, we announced that our Board of Directors had authorized a stock repurchase program. As of July 29, 2023, the remaining authorized amount for stock repurchases under this program is approximately $10.9 billion with no termination date.

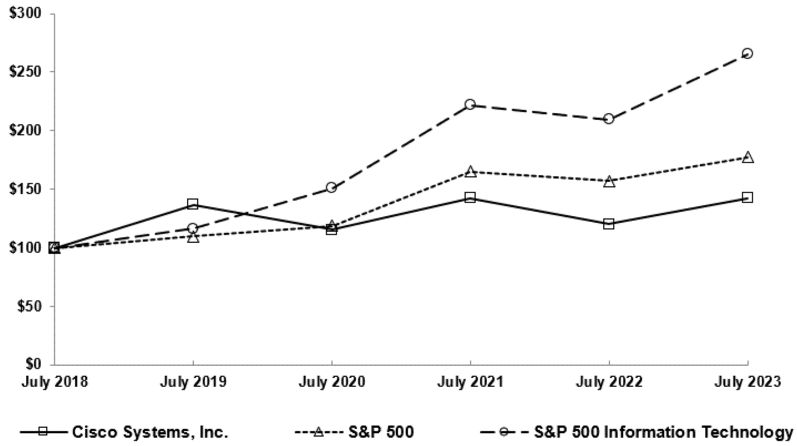
For the majority of restricted stock units granted, the number of shares issued on the date the restricted stock units vest is net of shares withheld to meet applicable tax withholding requirements. Although these withheld shares are not issued or considered common stock repurchases under our stock repurchase program and therefore are not included in the preceding table, they are treated as common stock repurchases in our financial statements as they reduce the number of shares that would have been issued upon vesting (see Note 15 to the Consolidated Financial Statements).

Stock Performance Graph

The information contained in this Stock Performance Graph section shall not be deemed to be "soliciting material" or "filed" or incorporated by reference in future filings with the SEC, or subject to the liabilities of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), except to the extent that Cisco specifically incorporates it by reference into a document filed under the Securities Act of 1933, as amended, or the Exchange Act.

The following graph shows a five-year comparison of the cumulative total stockholder return on Cisco common stock with the cumulative total returns of the S&P 500 Index, and the S&P Information Technology Index. The graph tracks the performance of a $100 investment in the Company's common stock and in each of the indexes (with the reinvestment of all dividends) on the date specified. Stockholder returns over the indicated period are based on historical data and should not be considered indicative of future stockholder returns.

Comparison of 5-Year Cumulative Total Return Among Cisco Systems, Inc., the S&P 500 Index, and the S&P Information Technology Index



	July 2018	July 2019	July 2020	July 2021	July 2022	July 2023
Cisco Systems, Inc.	$ 100.00	$ 136.47	$ 115.60	$ 142.33	$ 120.02	$ 142.29
S&P 500	$ 100.00	$ 109.53	$ 118.72	$ 164.83	$ 157.18	$ 177.38
S&P Information Technology	$ 100.00	$ 116.56	$ 150.84	$ 221.77	$ 209.55	$ 265.46

Item 6. [Reserved]

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

Forward-Looking Statements

This Annual Report on Form 10-K, including this Management's Discussion and Analysis of Financial Condition and Results of Operations, contains forward-looking statements regarding future events and our future results that are subject to the safe harbors created under the Securities Act of 1933, as amended (the "Securities Act"), and the Securities Exchange Act of 1934, as amended (the "Exchange Act"). All statements other than statements of historical facts are statements that could be deemed forward-looking statements. These statements are based on current expectations, estimates, forecasts, and projections about the industries in which we operate and the beliefs and assumptions of our management. Words such as "expects," "anticipates," "targets," "goals," "projects," "intends," "plans," "believes," "momentum," "seeks," "estimates," "continues," "endeavors," "strives," "may," variations of such words, and similar expressions are intended to identify such forward-looking statements. In addition, any statements that refer to projections of our future financial performance, our anticipated growth and trends in our businesses, and other characterizations of future events or circumstances are forward-looking statements. Readers are cautioned that these forward-looking statements are only predictions and are subject to risks, uncertainties, and assumptions that are difficult to predict, including those under "Part I, Item 1A. Risk Factors," and elsewhere herein. Therefore, actual results may differ materially and adversely from those expressed in any forward-looking statements. We undertake no obligation to revise or update any forward-looking statements for any reason.

OVERVIEW

Cisco designs and sells a broad range of technologies that power the Internet. We are integrating our product portfolios across networking, security, collaboration, applications and the cloud to create highly secure, intelligent platforms for our customers' digital businesses. These platforms are designed to help our customers manage more users, devices and things connecting to their networks. This will enable us to provide customers with a highly secure, intelligent platform for their digital business.

A summary of our results is as follows (in millions, except percentages and per-share amounts):

	Three Months Ended			Years Ended		
	July 29, 2023	July 30, 2022	Variance	**July 29, 2023**	July 30, 2022	Variance
Revenue	**$ 15,203**	$ 13,102	16 %	**$ 56,998**	$ 51,557	11 %
Gross margin percentage	**64.1 %**	61.3 %	2.8 pts	**62.7 %**	62.5 %	0.2 pts
Research and development	**$ 1,953**	$ 1,682	16 %	**$ 7,551**	$ 6,774	11 %
Sales and marketing	**$ 2,579**	$ 2,349	10 %	**$ 9,880**	$ 9,085	9 %
General and administrative	**$ 690**	$ 489	41 %	**$ 2,478**	$ 2,101	18 %
Total R&D, sales and marketing, general and administrative	**$ 5,222**	$ 4,520	16 %	**$ 19,909**	$ 17,960	11 %
Total as a percentage of revenue	**34.3 %**	34.5 %	(0.2) pts	**34.9 %**	34.8 %	0.1 pts
Restructuring and other charges included in operating expenses	**$ 203**	$ (2)	NM	**$ 531**	$ 6	NM
Operating income as a percentage of revenue	**28.0 %**	26.2 %	1.8 pts	**26.4 %**	27.1 %	(0.7) pts
Interest and other income (loss), net	**$ 218**	$ (18)	NM	**$ 287**	$ 508	(44) %
Income tax percentage	**11.5 %**	17.6 %	(6.1) pts	**17.7 %**	18.4 %	(0.7) pts
Net income	**$ 3,958**	$ 2,815	41 %	**$ 12,613**	$ 11,812	7 %
Net income as a percentage of revenue	**26.0 %**	21.5 %	4.5 pts	**22.1 %**	22.9 %	(0.8) pts
Earnings per share—diluted	**$ 0.97**	$ 0.68	43 %	**$ 3.07**	$ 2.82	9 %

Percentages may not recalculate due to rounding.

NM — Not meaningful

Fiscal 2023 Compared with Fiscal 2022

In fiscal 2023, we delivered strong results with growth in revenue and profitability. We remain focused on delivering innovation across our technologies to assist our customers in executing on their digital transformations. In past periods, we took multiple actions in order to mitigate component shortages and address supply constraints seen industry-wide. During fiscal 2023, we saw an overall improvement of supply constraints and, as a result, we were able to increase the delivery of products to our customers, which positively impacted product revenue. Further, we continued to make progress in the transition of our business model delivering increased software and subscriptions. We remain focused on accelerating innovation across our portfolio, and we believe that we have made continued progress on our strategic priorities. We continue to operate in a challenging macroeconomic and highly competitive environment. While the overall environment remains uncertain, we continue to aggressively invest in priority areas with the objective of driving profitable growth over the long term.

Total revenue increased by 11% compared with fiscal 2022. Within total revenue, product revenue increased by 13% and service revenue increased by 2%. In fiscal 2023, total software revenue was $17.0 billion across all product areas and service, an increase of 12%. Within total software revenue, subscription revenue increased 16%. Although product revenue increased, we saw a decline in product demand in fiscal 2023. We believe this was due to customers absorbing recently shipped products, adjusting to significant reductions in product lead times, and macroeconomic conditions.

Total gross margin increased by 0.2 percentage points. Product gross margin increased by 0.5 percentage points, largely driven by favorable pricing and favorable product mix partially offset by negative impacts from productivity. As a percentage of revenue, research and development, sales and marketing, and general and administrative expenses, collectively, increased by 0.1 percentage points. Operating income as a percentage of revenue decreased by 0.7 percentage points driven primarily by restructuring and other charges of $531 million in fiscal 2023. Diluted earnings per share increased by 9%, driven by an increase of 7% in net income and a decrease in diluted share count of 87 million shares.

In terms of our geographic segments, revenue from the Americas increased by $3.6 billion, EMEA revenue increased by $1.4 billion and revenue in our APJC segment increased by $0.4 billion. We experienced product revenue growth across each of our customer markets. From a product category perspective, total product revenue increased 13% year over year, driven by growth in revenue in Secure, Agile Networks of 22%; Internet for the Future of 1%; End-to-End Security of 4% and Optimized Application Experiences of 11%; partially offset by a product revenue decline in Collaboration of 9%.

Fourth Quarter Snapshot

For the fourth quarter of fiscal 2023, as compared with the fourth quarter of fiscal 2022, total revenue increased by 16%. Within total revenue, product revenue increased by 20% and service revenue increased by 4%. With regard to our geographic segment performance, on a year-over-year basis, revenue in Americas increased by 21%, EMEA increased by 10% and APJC by 7%. From a product category perspective, we experienced product revenue growth in Secure, Agile Networks; Internet for the Future and Optimized Application Experiences; partially offset by a decline in Collaboration. Product revenue in End-to-End Security was flat. Total gross margin increased by 2.8 percentage points, driven by favorable pricing, favorable product mix and productivity benefits driven by lower freight and logistics costs, component and other costs. As a percentage of revenue, research and development, sales and marketing, and general and administrative expenses, collectively, decreased by 0.2 percentage points. Operating income as a percentage of revenue increased by 1.8 percentage points. Diluted earnings per share increased by 43%, driven by an increase in net income of 41% and a decrease in diluted share count of 44 million shares.

Strategy and Priorities

As our customers add billions of new connections to their enterprises, and as more applications move to a multicloud environment, the network becomes even more critical. Our customers are navigating change at an unprecedented pace. In this dynamic environment, we believe their priorities are to transform infrastructure, secure the enterprise, power hybrid work, reimagine applications, and drive toward sustainability.

Our strategy is to securely connect everything. We are committed to driving a trusted customer experience, through our innovation, solutions, choice, and people.

For a full discussion of our strategy and priorities, see "Item 1. Business."

Other Key Financial Measures

The following is a summary of our other key financial measures for fiscal 2023 compared with fiscal 2022 (in millions):

	Fiscal 2023	Fiscal 2022
Cash and cash equivalents and investments	**$26,146**	$19,267
Cash provided by operating activities	**$19,886**	$13,226
Remaining performance obligations	**$34,868**	$31,539
Repurchases of common stock—stock repurchase program	**$4,271**	$7,734
Dividends paid	**$6,302**	$6,224
Inventories	**$3,644**	$2,568

CRITICAL ACCOUNTING ESTIMATES

The preparation of financial statements and related disclosures in conformity with accounting principles generally accepted in the United States requires us to make judgments, assumptions, and estimates that affect the amounts reported in the Consolidated Financial Statements and accompanying notes. Note 2 to the Consolidated Financial Statements describes the significant accounting policies and methods used in the preparation of the Consolidated Financial Statements. The accounting policies described below are significantly affected by critical accounting estimates. Such accounting policies require significant judgments, assumptions, and estimates used in the preparation of the Consolidated Financial Statements, and actual results could differ materially from the amounts reported based on these policies.

Revenue Recognition

We enter into contracts with customers that can include various combinations of products and services which are generally distinct and accounted for as separate performance obligations. As a result, our contracts may contain multiple performance obligations. We determine whether arrangements are distinct based on whether the customer can benefit from the product or service on its own or together with other resources that are readily available and whether our commitment to transfer the product or service to the customer is separately identifiable from other obligations in the contract. We classify our hardware, perpetual software licenses, and SaaS as distinct performance obligations. Term software licenses represent multiple obligations, which include software licenses and software maintenance. In transactions where we deliver hardware or software, we are typically the principal and we record revenue and costs of goods sold on a gross basis.

We recognize revenue upon transfer of control of promised goods or services in a contract with a customer in an amount that reflects the consideration we expect to receive in exchange for those products or services. Transfer of control occurs once the customer has the contractual right to use the product, generally upon shipment, electronic delivery (or when the software is available for download by the customer), or once title and risk of loss has transferred to the customer. Transfer of control can also occur over time for software maintenance and services as the customer receives the benefit over the contract term. Our hardware and perpetual software licenses are distinct performance obligations where revenue is recognized upfront upon transfer of control. Term software licenses include multiple performance obligations where the term licenses are recognized upfront upon transfer of control, with the associated software maintenance revenue recognized ratably over the contract term as services and software updates are provided. SaaS arrangements do not include the right for the customer to take possession of the software during the term, and therefore have one distinct performance obligation which is satisfied over time with revenue recognized ratably over the contract term as the customer consumes the services. On our product sales, we record consideration from shipping and handling on a gross basis within net product sales. We record our revenue net of any associated sales taxes.

Revenue is allocated among these performance obligations in a manner that reflects the consideration that we expect to be entitled to for the promised goods or services based on standalone selling prices (SSP). SSP is estimated for each distinct performance obligation and judgment may be required in their determination. The best evidence of SSP is the observable price of a product or service when we sell the goods separately in similar circumstances and to similar customers. In instances where SSP is not directly observable, we determine SSP using information that may include market conditions and other observable inputs.

We assess relevant contractual terms in our customer contracts to determine the transaction price. We apply judgment in identifying contractual terms and determining the transaction price as we may be required to estimate variable consideration when determining the amount of revenue to recognize. Variable consideration includes potential contractual penalties and various rebate, cooperative marketing and other incentive programs that we offer to our distributors, channel partners and customers. When determining the amount of revenue to recognize, we estimate the expected usage of these programs, applying the expected value or most likely estimate and update the estimate at each reporting period as actual utilization becomes available. We also consider the customers' right of return in determining the transaction price, where applicable. If actual credits received by distributors under these programs were to deviate significantly from our estimates, which are based on historical experience, our revenue could be adversely affected.

See Note 3 to the Consolidated Financial Statements for more details.

Inventory Valuation and Liability for Purchase Commitments with Contract Manufacturers and Suppliers

Inventory is written down based on excess and obsolete inventories, determined primarily by future demand forecasts. Inventory write-downs are measured as the difference between the cost of the inventory and net realizable value, based upon assumptions about future demand, and are charged to the provision for inventory, which is a component of our cost of sales. At the point of the loss recognition, a new, lower cost basis for that inventory is established, and subsequent changes in facts and circumstances do not result in the restoration or increase in that newly established cost basis.

We record a liability for firm, noncancelable, and unconditional purchase commitments with contract manufacturers and suppliers for quantities in excess of our future demand forecasts consistent with the valuation of our excess and obsolete inventory.

Our provision for inventory was $307 million, $102 million, and $116 million in fiscal 2023, 2022, and 2021, respectively. The provision for the liability related to purchase commitments with contract manufacturers and suppliers was $423 million, $227 million, and $76 million in fiscal 2023, 2022, and 2021, respectively. If there were to be a sudden and significant decrease in demand for our products, if there were a higher incidence of inventory obsolescence because of rapidly changing technology and customer requirements, or if supply constraints were to continue, we could be required to increase our inventory write-downs, and our liability for purchase commitments with contract manufacturers and suppliers, and accordingly our profitability, could be adversely affected. We regularly evaluate our exposure for inventory write-downs, and the adequacy of our liability for purchase commitments. For further discussion around the Supply Constraints Impacts and Risks, see "—Results of Operations—Gross Margin—Supply Constraints Impacts and Risks" and "—Liquidity and Capital Resources—Inventory Supply Chain."

Loss Contingencies

We are subject to the possibility of various losses arising in the ordinary course of business. We consider the likelihood of the incurrence of a liability, as well as our ability to reasonably estimate the amount of loss, in determining loss contingencies. An estimated loss contingency is accrued when it is probable that a liability has been incurred and the amount of loss can be reasonably estimated. We regularly evaluate information available to us to determine whether such accruals should be made or adjusted and whether new accruals are required.

Third parties, including customers, have in the past and may in the future assert claims or initiate litigation related to exclusive patent, copyright, trademark, and other intellectual property rights to technologies and related standards that are relevant to us. These assertions have increased over time as a result of our growth and the general increase in the pace of patent claims assertions, particularly in the United States. If any infringement or other intellectual property claim made against us by any third party is successful, or if we fail to develop non-infringing technology or license the proprietary rights on commercially reasonable terms and conditions, our business, operating results, and financial condition could be materially and adversely affected.

Goodwill and Purchased Intangible Asset Impairments

Our methodology for allocating the purchase price relating to purchase acquisitions is determined through established valuation techniques. Goodwill represents a residual value as of the acquisition date, which in most cases results in measuring goodwill as an excess of the purchase consideration transferred plus the fair value of any noncontrolling interest in the acquired company over the fair value of net assets acquired, including contingent consideration. We perform goodwill impairment tests on an annual basis in the fourth fiscal quarter and between annual tests in certain circumstances for each reporting unit. The assessment of fair value for goodwill and purchased intangible assets is based on factors that market participants would use in an orderly transaction in accordance with the new accounting guidance for the fair value measurement of nonfinancial assets.

In response to changes in industry and market conditions, we could be required to strategically realign our resources and consider restructuring, disposing of, or otherwise exiting businesses, which could result in an impairment of goodwill. There was no impairment of goodwill in fiscal 2023, 2022, and 2021. For the annual impairment testing in fiscal 2023, the excess of the fair value over the carrying value for each of our reporting units was $61.3 billion for the Americas, $73.8 billion for EMEA, and $34.3 billion for APJC.

During the fourth quarter of fiscal 2023, we performed a sensitivity analysis for goodwill impairment with respect to each of our respective reporting units and determined that a hypothetical 10% decline in the fair value of each reporting unit would not result in an impairment of goodwill for any reporting unit.

The fair value of acquired technology and patents, as well as acquired technology under development, is determined at acquisition date primarily using the income approach, which discounts expected future cash flows to present value. The discount rates used in the present value calculations are typically derived from a weighted-average cost of capital analysis and then adjusted to reflect risks inherent in the development lifecycle as appropriate. We consider the pricing model for products related to these acquisitions to be standard within the high-technology communications industry, and the applicable discount rates represent the rates that market participants would use for valuation of such intangible assets.

We make judgments about the recoverability of purchased intangible assets with finite lives whenever events or changes in circumstances indicate that an impairment may exist. Recoverability of purchased intangible assets with finite lives is measured by comparing the carrying amount of the asset to the future undiscounted cash flows the asset is expected to generate. We review indefinite-lived intangible assets for impairment annually or whenever events or changes in circumstances indicate that the asset might be impaired. If the asset is considered to be impaired, the amount of any impairment is measured as the difference between the carrying value and the fair value of the impaired asset. Assumptions and estimates about future values and remaining useful lives of our purchased intangible assets are complex and 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. Our ongoing consideration of all the factors described previously could result in impairment charges in the future, which could adversely affect our net income.

Income Taxes

We are subject to income taxes in the United States and numerous foreign jurisdictions. Our effective tax rates differ from the statutory rate, primarily due to the tax impact of state taxes, foreign operations, R&D tax credits, foreign-derived intangible income deductions, global intangible low-taxed income, tax audit settlements, nondeductible compensation, and international realignments. Our effective tax rate was 17.7%, 18.4%, and 20.1% in fiscal 2023, 2022, and 2021, respectively.

Significant judgment is required in evaluating our uncertain tax positions and determining our provision for income taxes. Although we believe our reserves are reasonable, no assurance can be given that the final tax outcome of these matters will not be different from that which is reflected in our historical income tax provisions and accruals. We adjust these reserves in light of changing facts and circumstances, such as the closing of a tax audit or the refinement of an estimate. To the extent that the final tax outcome of these matters is different than the amounts recorded, such differences will impact the provision for income taxes in the period in which such determination is made. The provision for income taxes includes the impact of reserve provisions and changes to reserves that are considered appropriate, as well as the related net interest and penalties.

Significant judgment is also required in determining any valuation allowance recorded against deferred tax assets. In assessing the need for a valuation allowance, we consider all available evidence, including past operating results, estimates of future taxable income, and the feasibility of tax planning strategies. In the event that we change our determination as to the amount of deferred tax assets that can be realized, we will adjust our valuation allowance with a corresponding impact to the provision for income taxes in the period in which such determination is made.

Our provision for income taxes is subject to volatility and could be adversely impacted by earnings being lower than anticipated in countries that have lower tax rates and higher than anticipated in countries that have higher tax rates; by changes in the valuation of our deferred tax assets and liabilities; by changes to foreign-derived intangible income deduction, global intangible low-tax income and base erosion and anti-abuse tax laws, regulations, or interpretations thereof; by expiration of or lapses in tax incentives; by transfer pricing adjustments, including the effect of acquisitions on our legal structure; by tax effects of nondeductible compensation; by tax costs related to intercompany realignments; by changes in accounting principles; or by changes in tax laws and regulations, treaties, or interpretations thereof, including changes to the taxation of earnings of our foreign subsidiaries, the deductibility of expenses attributable to foreign income, and the foreign tax credit rules. Significant judgment is required to determine the recognition and measurement attributes prescribed in the accounting guidance for uncertainty in income taxes. The OECD, an international association comprised of 38 countries, including the United States, has made changes and is contemplating additional changes to numerous long-standing tax principles. There can be no assurance that these changes and any contemplated changes if finalized, once adopted by countries, will not have an adverse impact on our provision for income taxes. As a result of certain of our ongoing employment and capital investment actions and commitments, our income in certain countries was subject to reduced tax rates. Our failure to meet these commitments could adversely impact our provision for income taxes. In addition, we are subject to the continuous examination of our income tax returns by the IRS and other tax authorities. We regularly assess the likelihood of adverse outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. There can be no assurance that the outcomes from these continuous examinations will not have an adverse impact on our operating results and financial condition.

RESULTS OF OPERATIONS

A discussion regarding our financial condition and results of operations for fiscal 2023 compared to fiscal 2022 is presented below. A discussion regarding our financial condition and results of operations for fiscal 2022 compared to fiscal 2021 can be found under Item 7 in our Annual Report on Form 10-K for the fiscal year ended July 30, 2022, filed with the SEC on September 8, 2022.

Revenue

The following table presents the breakdown of revenue between product and service (in millions, except percentages):

	Years Ended			2023 vs. 2022	
	July 29, 2023	July 30, 2022	July 31, 2021	Variance in Dollars	Variance in Percent
Revenue:					
Product	**$ 43,142**	$ 38,018	$ 36,014	$ 5,124	13 %
Percentage of revenue	***75.7 %***	*73.7 %*	*72.3 %*		
Service	**13,856**	13,539	13,804	317	2 %
Percentage of revenue	***24.3 %***	*26.3 %*	*27.7 %*		
Total	**$ 56,998**	$ 51,557	$ 49,818	$ 5,441	11 %

We manage our business primarily on a geographic basis, organized into three geographic segments. Our revenue, which includes product and service for each segment, is summarized in the following table (in millions, except percentages):

	Years Ended			2023 vs. 2022	
	July 29, 2023	July 30, 2022	July 31, 2021	Variance in Dollars	Variance in Percent
Revenue:					
Americas	**$ 33,447**	$ 29,814	$ 29,161	$ 3,633	12 %
Percentage of revenue	***58.7 %***	*57.8 %*	*58.5 %*		
EMEA	**15,135**	13,715	12,951	1,420	10 %
Percentage of revenue	***26.6 %***	*26.6 %*	*26.0 %*		
APJC	**8,417**	8,027	7,706	390	5 %
Percentage of revenue	***14.8 %***	*15.6 %*	*15.5 %*		
Total	**$ 56,998**	$ 51,557	$ 49,818	$ 5,441	11 %

Amounts may not sum and percentages may not recalculate due to rounding.

Total revenue in fiscal 2023 increased by 11% compared with fiscal 2022. Product revenue increased by 13% and service revenue increased by 2%. Our total revenue reflected growth across each of our geographic segments.

In addition to the impact of macroeconomic factors, including the IT spending environment and the level of spending by government entities, revenue by segment in a particular period may be significantly impacted by the timing of revenue recognition for complex transactions with multiple performance obligations. In addition, certain customers tend to make large and sporadic purchases, and the revenue related to these transactions may also be affected by the timing of revenue recognition, which in turn would impact the revenue of the relevant segment.

Product Revenue by Segment

The following table presents the breakdown of product revenue by segment (in millions, except percentages):

	Years Ended			2023 vs. 2022	
	July 29, 2023	July 30, 2022	July 31, 2021	Variance in Dollars	Variance in Percent
Product revenue:					
Americas	**$ 25,019**	$ 21,620	$ 20,688	$ 3,399	16 %
Percentage of product revenue	***58.0 %***	*56.9 %*	*57.5 %*		
EMEA	**11,866**	10,545	9,805	1,321	13 %
Percentage of product revenue	***27.5 %***	*27.7 %*	*27.2 %*		
APJC	**6,257**	5,854	5,521	403	7 %
Percentage of product revenue	***14.5 %***	*15.4 %*	*15.3 %*		
Total	**$ 43,142**	$ 38,018	$ 36,014	$ 5,124	13 %

Amounts may not sum and percentages may not recalculate due to rounding.

Americas

Product revenue in the Americas segment increased by 16%. The product revenue increase was driven by growth across all customer markets. From a country perspective, product revenue increased by 15% in the United States, 10% in Canada, 31% in Mexico and 25% in Brazil.

EMEA

The increase in product revenue in the EMEA segment of 13% was driven by growth in the public sector, enterprise and commercial markets, partially offset by a decline in the service provider market. From a country perspective, product revenue increased by 16% in Germany, 4% in the United Kingdom and 19% in France.

APJC

Product revenue in the APJC segment increased by 7%, driven by growth in the commercial and public sector markets, partially offset by a decline in the service provider market. Product revenue in the enterprise market was flat. From a country perspective, product revenue increased by 62% in India, 13% in Australia and 8% in China, partially offset by a decline of 6% in Japan.

Product Revenue by Category

In addition to the primary view on a geographic basis, we also prepare financial information related to product categories and customer markets for various purposes.

The following table presents product revenue by category (in millions, except percentages):

	Years Ended			2023 vs. 2022	
	July 29, 2023	July 30, 2022	July 31, 2021	Variance in Dollars	Variance in Percent
Product revenue:					
Secure, Agile Networks	**$ 29,105**	$ 23,831	$ 22,725	$ 5,274	22 %
Internet for the Future	**5,306**	5,276	4,511	30	1 %
Collaboration	**4,052**	4,472	4,727	(420)	(9) %
End-to-End Security	**3,859**	3,699	3,382	160	4 %
Optimized Application Experiences	**811**	729	654	82	11 %
Other Products	**9**	11	15	(2)	(15) %
Total	**$ 43,142**	$ 38,018	$ 36,014	$ 5,124	13 %

Amounts may not sum and percentages may not recalculate due to rounding. Amounts for prior fiscal years have been reclassified to conform to the current fiscal year's presentation.

Secure, Agile Networks

The Secure, Agile Networks product category represents our core networking offerings related to switching, enterprise routing, wireless, and compute. Secure, Agile Networks revenue increased by 22%, or $5.3 billion, with growth across the portfolio except servers. Revenue grew in both campus switching and data center switching. This was primarily driven by strong growth in our Catalyst 9000 series, Nexus 9000 series and Meraki switching offerings. The increase in enterprise routing was primarily driven by growth in our Catalyst 8000 routers, SD-WAN and IoT routing offerings. Wireless had strong double-digit growth driven by our WiFi-6 products and Meraki offerings.

Internet for the Future

The Internet for the Future product category includes our routed optical networking, 5G, silicon and optics solutions. Revenue in our Internet for the Future product category increased by 1%, or $30 million, primarily driven by growth in our Core routing portfolio, including our Cisco 8000 series offerings. We also saw double-digit growth in the webscale provider market.

Collaboration

The Collaboration product category consists of our Meetings, Collaboration Devices, Calling, Contact Center and CPaaS offerings. Revenue in our Collaboration product category decreased 9%, or $420 million, primarily driven by declines in Collaboration Devices and Meetings, partially offset by growth in our Calling and Contact Center offerings.

End-to-End Security

Revenue in our End-to-End Security product category increased by 4%, or $160 million, primarily driven by growth in our Unified Threat Management offerings and Zero Trust portfolio.

Optimized Application Experiences

The Optimized Application Experiences product category consists of our full stack observability and network assurance offerings. Revenue in our Optimized Application Experiences product category increased 11%, or $82 million, driven by growth across the portfolio, including double-digit growth in our ThousandEyes offerings.

Service Revenue by Segment

The following table presents the breakdown of service revenue by segment (in millions, except percentages):

	Years Ended			2023 vs. 2022	
	July 29, 2023	July 30, 2022	July 31, 2021	Variance in Dollars	Variance in Percent
Service revenue:					
Americas	**$ 8,427**	$ 8,194	$ 8,472	$ 233	3 %
Percentage of service revenue	***60.8 %***	*60.5 %*	*61.4 %*		
EMEA	**3,269**	3,171	3,146	98	3 %
Percentage of service revenue	***23.6 %***	*23.4 %*	*22.8 %*		
APJC	**2,160**	2,173	2,186	(13)	(1) %
Percentage of service revenue	***15.6 %***	*16.0 %*	*15.8 %*		
Total	**$ 13,856**	$ 13,539	$ 13,804	$ 317	2 %

Amounts may not sum and percentages may not recalculate due to rounding.

Service revenue increased 2%, driven by growth in our solution support and maintenance business offerings, partially offset by declines in our advisory services and software support offerings. Service revenue increased in the Americas and EMEA segments, partially offset by a decline in the APJC segment.

Gross Margin

The following table presents the gross margin for products and services (in millions, except percentages):

	AMOUNT			PERCENTAGE		
Years Ended	**July 29, 2023**	July 30, 2022	July 31, 2021	**July 29, 2023**	July 30, 2022	July 31, 2021
Gross margin:						
Product	**$ 26,552**	$ 23,204	$ 22,714	**61.5 %**	61.0 %	63.1 %
Service	**9,201**	9,044	9,180	**66.4 %**	66.8 %	66.5 %
Total	**$ 35,753**	$ 32,248	$ 31,894	**62.7 %**	62.5 %	64.0 %

Product Gross Margin

The following table summarizes the key factors that contributed to the change in product gross margin percentage from fiscal 2022 to fiscal 2023:

	Product Gross Margin Percentage
Fiscal 2022	**61.0 %**
Productivity [1]	**(2.5) %**
Product pricing	**1.7 %**
Mix of products sold	**0.8 %**
Others	**0.5 %**
Fiscal 2023	**61.5 %**

[1] Productivity includes overall manufacturing-related costs, such as component costs, warranty expense, provision for inventory, freight, logistics, shipment volume, and other items not categorized elsewhere.

Product gross margin increased by 0.5 percentage points primarily driven by favorable pricing and product mix. The favorable pricing was primarily driven by price increases implemented during fiscal 2022 and were recognized as we ship our products. This was partially offset by negative impacts from productivity, largely driven by increased costs from component and other costs, partially offset by lower freight and logistics costs. We implemented the price increases to partially offset increases in commodity and other costs.

Supply Constraints Impacts and Risks

During fiscal 2023, we saw an overall improvement of supply constraints which have persisted industry-wide for multiple periods. In past periods, we took multiple actions in order to mitigate component shortages and address significant supply constraints. These supply constraints resulted in significant increased costs (i.e., component and other commodity costs, expedite fees, etc.) which had, and may continue to have, a negative impact on our product gross margin and resulted in extended lead times for us and our customers. The mitigating actions we took included: partnering with several of our key suppliers utilizing our volume purchasing ability and extending supply coverage, including, in certain cases, revising supplier arrangements; paying and committing to pay in the future significantly higher costs for certain components; modifying our product designs in order to leverage alternate suppliers, where possible; and continually optimizing our inventory build and customer delivery plans, among others. These mitigating actions have resulted in increased inventory balances, inventory purchase commitments, and inventory deposits and prepayments compared to prior fiscal years, which, in turn, has increased our supply chain exposure, which could result in negative impacts to our product gross margin in future periods, including material excess and obsolete charges, if product demand significantly decreases for a sustained duration or we are unable to continue to mitigate the remaining supply chain exposures. We believe these mitigating actions have helped us to optimize our access to critical components and meet customer demand for our products as a result of the component shortages and significant supply constraints we saw in past periods. While these mitigating actions have resulted in a decrease of our overall supply chain balances during fiscal 2023, these balances continue to be higher as compared to prior fiscal years.

Service Gross Margin

Our service gross margin percentage decreased by 0.4 percentage points primarily due to higher headcount-related and delivery costs, partially offset by higher sales volume and favorable mix of service offerings.

Our service gross margin normally experiences some fluctuations due to various factors such as the timing of contract initiations in our renewals, our strategic investments in headcount, and the resources we deploy to support the overall service business. Other factors include the mix of service offerings, as the gross margin from our advanced services is typically lower than the gross margin from technical support services.

Gross Margin by Segment

The following table presents the total gross margin for each segment (in millions, except percentages):

	AMOUNT			PERCENTAGE		
Years Ended	**July 29, 2023**	July 30, 2022	July 31, 2021	**July 29, 2023**	July 30, 2022	July 31, 2021
Gross margin:						
Americas	**$ 21,350**	$ 19,117	$ 19,499	**63.8 %**	64.1 %	66.9 %
EMEA	**10,016**	8,969	8,466	**66.2 %**	65.4 %	65.4 %
APJC	**5,424**	5,241	4,949	**64.4 %**	65.3 %	64.2 %
Segment total	**36,788**	33,326	32,914	**64.5 %**	64.6 %	66.1 %
Unallocated corporate items [1]	**(1,035)**	(1,078)	(1,020)			
Total	**$ 35,753**	$ 32,248	$ 31,894	**62.7 %**	62.5 %	64.0 %

[1] The unallocated corporate items include the effects of amortization and impairments of acquisition-related intangible assets, share-based compensation expense, significant litigation settlements and other contingencies, charges related to asset impairments and restructurings, and certain other charges. We do not allocate these items to the gross margin for each segment because management does not include such information in measuring the performance of the operating segments.

Amounts may not sum and percentages may not recalculate due to rounding.

We experienced a gross margin percentage decrease in our Americas segment due to negative impacts from productivity, partially offset by favorable pricing and favorable product mix.

Gross margin in our EMEA segment increased due to favorable pricing, and to a lesser extent, favorable product mix, partially offset by negative impacts from productivity.

The APJC segment gross margin percentage decrease was due to negative impacts from productivity and pricing erosion, partially offset by favorable product mix and higher service gross margin.

Research and Development (“R&D”), Sales and Marketing, and General and Administrative (“G&A”) Expenses

R&D, sales and marketing, and G&A expenses are summarized in the following table (in millions, except percentages):

	Years Ended			2023 vs. 2022	
	July 29, 2023	July 30, 2022	July 31, 2021	Variance in Dollars	Variance in Percent
Research and development	**$ 7,551**	$ 6,774	$ 6,549	$ 777	11 %
Percentage of revenue	***13.2 %***	*13.1 %*	*13.1 %*		
Sales and marketing	**9,880**	9,085	9,259	795	9 %
Percentage of revenue	***17.3 %***	*17.6 %*	*18.6 %*		
General and administrative	**2,478**	2,101	2,152	377	18 %
Percentage of revenue	***4.3 %***	*4.1 %*	*4.3 %*		
Total	**$ 19,909**	$ 17,960	$ 17,960	$ 1,949	11 %
Percentage of revenue	***34.9 %***	*34.8 %*	*36.1 %*		

R&D Expenses

R&D expenses increased due to higher headcount-related expenses, higher share-based compensation expense and higher discretionary spending, partially offset by lower contracted services spending and lower acquisitions and divestitures related costs.

We continue to invest in R&D in order to bring a broad range of products to market in a timely fashion. If we believe that we are unable to enter a particular market in a timely manner with internally developed products, we may purchase or license technology from other businesses, or we may partner with or acquire businesses as an alternative to internal R&D.

Sales and Marketing Expenses

Sales and marketing expenses increased primarily due to higher headcount-related expenses, higher discretionary spending and higher share-based compensation expense, partially offset by the absence of certain non-recurring charges recognized due to the Russia and Ukraine war in fiscal 2022 and lower contracted services spending.

G&A Expenses

G&A expenses increased due to higher headcount-related expenses, higher discretionary spending and higher share-based compensation expense, partially offset by the absence of certain non-recurring charges recognized due to the Russia and Ukraine war in fiscal 2022 and lower acquisition and divestitures related costs.

Effect of Foreign Currency

In fiscal 2023, foreign currency fluctuations, net of hedging, decreased the combined R&D, sales and marketing, and G&A expenses by approximately $364 million, or 2.0%, compared with fiscal 2022.

Amortization of Purchased Intangible Assets

The following table presents the amortization of purchased intangible assets including impairment charges (in millions):

Years Ended	**July 29, 2023**	July 30, 2022	July 31, 2021
Amortization of purchased intangible assets:			
Cost of sales	**$ 649**	$ 749	$ 716
Operating expenses	**282**	328	215
Total	**$ 931**	$ 1,077	$ 931

The decrease in amortization of purchased intangible assets was primarily due to certain purchased intangible assets that became fully amortized, partially offset by amortization of purchased intangibles from our recent acquisitions.

Restructuring and Other Charges

The following table presents restructuring and other charges (in millions):

Years Ended	July 29, 2023	July 30, 2022	July 31, 2021
Restructuring and other charges included in operating expenses	**$ 531**	$ 6	$ 886

In the second quarter of fiscal 2023, we announced a restructuring plan in order to rebalance the organization and enable further investment in key priority areas, of which approximately 5% of the global workforce would be impacted. The total pretax charges are estimated to be approximately $700 million. In connection with this restructuring plan, we incurred charges of $535 million during fiscal 2023. We expect the plan to be substantially completed by the end of the first quarter of fiscal 2024. We expect to reinvest substantially all of the costs savings from this restructuring plan in our key priority areas. As a result, the overall cost savings from this restructuring plan are not expected to be material for future periods.

Operating Income

The following table presents our operating income and our operating income as a percentage of revenue (in millions, except percentages):

Years Ended	July 29, 2023	July 30, 2022	July 31, 2021
Operating income	**$ 15,031**	$ 13,969	$ 12,833
Operating income as a percentage of revenue	**26.4 %**	27.1 %	25.8 %

Operating income increased by 8%, and as a percentage of revenue operating income decreased by 0.7 percentage points. The increase in operating income was primarily due to a revenue increase and a gross margin percentage increase (driven by favorable pricing and favorable product mix, partially offset by negative impacts from productivity), partially offset by higher operating expenses. The decrease in operating income as a percentage of revenue was primarily due to an operating expenses percentage increase.

Interest and Other Income (Loss), Net

Interest Income (Expense), Net The following table summarizes interest income and interest expense (in millions):

	Years Ended			2023 vs. 2022
	July 29, 2023	July 30, 2022	July 31, 2021	Variance in Dollars
Interest income	**$ 962**	$ 476	$ 618	$ 486
Interest expense	**(427)**	(360)	(434)	(67)
Interest income (expense), net	**$ 535**	$ 116	$ 184	$ 419

Interest income increased driven by higher average balance of cash and available-for-sale debt investments and higher interest rates. The increase in interest expense was driven by higher interest rates, partially offset by a lower average debt balance.

Other Income (Loss), Net The components of other income (loss), net, are summarized as follows (in millions):

	Years Ended			2023 vs. 2022
	July 29, 2023	July 30, 2022	July 31, 2021	Variance in Dollars
Gains (losses) on investments, net:				
Available-for-sale debt investments	**$ (21)**	$ 9	$ 53	$ (30)
Marketable equity investments	**37**	(38)	6	75
Privately held investments	**(193)**	486	266	(679)
Net gains (losses) on investments	**(177)**	457	325	(634)
Other gains (losses), net	**(71)**	(65)	(80)	(6)
Other income (loss), net	**$ (248)**	$ 392	$ 245	$ (640)

The decrease in our other income (loss), net was primarily driven by realized and unrealized losses and impairment charges on our privately held investments and changes in net gains (losses) on our available-for-sale debt investments and marketable equity investments.

Provision for Income Taxes

The provision for income taxes resulted in an effective tax rate of 17.7% for fiscal 2023, compared with 18.4% for fiscal 2022. The net 0.7 percentage points decrease in the effective tax rate was primarily due to an increase in U.S. foreign-derived intangible income deduction benefit driven by the capitalization and amortization of R&D expenses effective for fiscal 2023 as required by the Tax Cuts and Jobs Act (“the Tax Act”) partially offset by a decrease in the U.S. federal research tax credit and stock compensation windfall benefit.

For a full reconciliation of our effective tax rate to the U.S. federal statutory rate of 21% and for further explanation of our provision for income taxes, see Note 18 to the Consolidated Financial Statements.

LIQUIDITY AND CAPITAL RESOURCES

The following sections discuss the effects of changes in our balance sheet, our capital allocation strategy including stock repurchase program and dividends, our contractual obligations, and certain other commitments and activities on our liquidity and capital resources.

Balance Sheet and Cash Flows

Cash and Cash Equivalents and Investments The following table summarizes our cash and cash equivalents and investments (in millions):

	July 29, 2023	July 30, 2022	Increase (Decrease)
Cash and cash equivalents	**$ 10,123**	$ 7,079	$ 3,044
Available-for-sale debt investments	**15,592**	11,947	3,645
Marketable equity securities	**431**	241	190
Total	**$ 26,146**	$ 19,267	$ 6,879

The net increase in cash and cash equivalents and investments from fiscal 2022 to fiscal 2023 was primarily driven by cash provided by operating activities of $19.9 billion. This source of cash was partially offset by cash returned to stockholders in the form of cash dividends of $6.3 billion and repurchases of common stock of $4.3 billion under the stock repurchase program, a net decrease in debt of $1.1 billion, capital expenditures of $0.8 billion and net cash paid for acquisitions and divestitures of $0.3 billion.

In February 2023, an IRS announcement related to the California floods (IR-2023-33) deferred our remaining fiscal 2023 U.S. federal income tax payment deadlines until October 2023. Beginning in fiscal 2023, we were required to capitalize and amortize R&D expenses as required by the Tax Act. This change would have resulted in significantly higher cash paid for income taxes during fiscal 2023 absent the payment deferral. As of July 29, 2023, we have deferred approximately $2.8 billion of federal tax payments. Our cash paid for income taxes for the first quarter of fiscal 2024 will significantly increase as a result of these deferred federal tax payments.

We maintain an investment portfolio of various holdings, types, and maturities. We classify our investments as short-term investments based on their nature and their availability for use in current operations. We believe the overall credit quality of our portfolio is strong, with our cash equivalents and our available-for-sale debt investment portfolio consisting primarily of high quality investment-grade securities. We believe that our strong cash and cash equivalents and investments position allows us to use our cash resources for strategic investments to gain access to new technologies, for acquisitions, for customer financing activities, for working capital needs, and for the repurchase of shares of common stock and payment of dividends as discussed below.

Securities Lending We periodically engage in securities lending activities with certain of our available-for-sale debt investments. These transactions are accounted for as a secured lending of the securities, and the securities are typically loaned only on an overnight basis. We require collateral equal to at least 102% of the fair market value of the loaned security and that the collateral be in the form of cash or liquid, high-quality assets. We engage in these secured lending transactions only with highly creditworthy counterparties, and the associated portfolio custodian has agreed to indemnify us against collateral losses. We did not experience any losses in connection with the secured lending of securities during the periods presented. As of July 29, 2023 and July 30, 2022, we had no outstanding securities lending transactions.

Free Cash Flow and Capital Allocation As part of our capital allocation strategy, we target to return a minimum of 50% of our free cash flow annually to our stockholders through cash dividends and repurchases of common stock.

We define free cash flow as net cash provided by operating activities less cash used to acquire property and equipment. The following table reconciles our net cash provided by operating activities to free cash flow (in millions):

Years Ended	**July 29, 2023**	July 30, 2022	July 31, 2021
Net cash provided by operating activities	**$ 19,886**	$ 13,226	$ 15,454
Acquisition of property and equipment	**(849)**	(477)	(692)
Free cash flow	**$ 19,037**	$ 12,749	$ 14,762

We expect that cash provided by operating activities may fluctuate in future periods as a result of a number of factors, including fluctuations in our operating results, the rate at which products are shipped during the quarter (which we refer to as shipment linearity), the timing and collection of accounts receivable and financing receivables, inventory and supply chain management, deferred revenue and the timing and amount of tax and other payments. For additional discussion, see “Part I, Item 1A. Risk Factors” in this report.

We consider free cash flow to be a liquidity measure that provides useful information to management and investors because of our intent to return a stated percentage of free cash flow to stockholders in the form of dividends and stock repurchases. We further regard free cash flow as a useful measure because it reflects cash that can be used to, among other things, invest in our business, make strategic acquisitions, repurchase common stock, and pay dividends on our common stock, after deducting capital investments. A limitation of the utility of free cash flow as a measure of financial performance and liquidity is that the free cash flow does not represent the total increase or decrease in our cash balance for the period. In addition, we have other required uses of cash, including repaying the principal of our outstanding indebtedness. Free cash flow is not a measure calculated in accordance with U.S. generally accepted accounting principles and should not be regarded in isolation or as an alternative for net cash provided by operating activities or any other measure calculated in accordance with such principles, and other companies may calculate free cash flow in a different manner than we do.

The following table summarizes the dividends paid and stock repurchases (in millions, except per-share amounts):

	DIVIDENDS		STOCK REPURCHASE PROGRAM			TOTAL
Years Ended	Per Share	Amount	Shares	Weighted-Average Price per Share	Amount	Amount
July 29, 2023	**$ 1.54**	**$ 6,302**	**88**	**$ 48.49**	**$ 4,271**	**$ 10,573**
July 30, 2022	$ 1.50	$ 6,224	146	$ 52.82	$ 7,734	$ 13,958
July 31, 2021	$ 1.46	$ 6,163	64	$ 45.48	$ 2,902	$ 9,065

On August 16, 2023, our Board of Directors declared a quarterly dividend of $0.39 per common share to be paid on October 25, 2023, to all stockholders of record as of the close of business on October 4, 2023. Any future dividends are subject to the approval of our Board of Directors.

The remaining authorized amount for stock repurchases under this program is approximately $10.9 billion, with no termination date.

Accounts Receivable, Net The following table summarizes our accounts receivable, net (in millions):

	July 29, 2023	July 30, 2022	Increase (Decrease)
Accounts receivable, net	**$ 5,854**	$ 6,622	$ (768)

Our accounts receivable net, as of July 29, 2023 decreased by approximately 12% compared with the end of fiscal 2022, primarily due to timing and amount of product and service billings at the end of fiscal 2023 compared with the end of fiscal 2022.

Inventory Supply Chain The following table summarizes our inventories and inventory purchase commitments with contract manufacturers and suppliers (in millions):

	July 29, 2023	July 30, 2022	July 31, 2021	Variance vs. July 30, 2022	Variance vs. July 31, 2021
Inventories	**$ 3,644**	$ 2,568	$ 1,559	$ 1,076	$ 2,085
Inventory purchase commitments	**$ 7,253**	$ 12,964	$ 10,254	$ (5,711)	$ (3,001)
Inventory deposits and prepayments	**$ 1,109**	$ 1,484	$ 162	$ (375)	$ 947

The following table summarizes our inventory purchase commitments with contract manufacturers and suppliers by period (in millions):

	July 29, 2023	July 30, 2022	July 31, 2021	Variance vs. July 30, 2022	Variance vs. July 31, 2021
Less than 1 year	**$ 5,270**	$ 9,954	$ 6,903	$ (4,684)	$ (1,633)
1 to 3 years	**1,783**	2,240	1,806	(457)	(23)
3 to 5 years	**200**	770	1,545	(570)	(1,345)
Total	**$ 7,253**	$ 12,964	$ 10,254	$ (5,711)	$ (3,001)

Inventory as of July 29, 2023 increased by 42% and inventory purchase commitments with contract manufacturers and suppliers decreased by 44% from our balances at the end of fiscal 2022. The combined decrease of 30% in our inventory and inventory purchase commitments as compared with the end of fiscal 2022 was primarily due to fulfillment of customer demand as overall supply constraints improved and our continued efforts to work with contract manufacturers and suppliers to optimize our inventory and purchase commitment levels.

We increased our balances in prior fiscal years in order to address significant supply constraints seen industry-wide. The increases were primarily due to arrangements to secure supply and pricing for certain product components and commitments with contract manufacturers to meet customer demand and to address extended lead times, as well as advance payments with suppliers to secure future supply, as a result of the supply constraints. As discussed, our risks of future material excess and obsolete inventory and related losses are further outlined in the Result of Operations—Product Gross Margin section.

We purchase components from a variety of suppliers and use several contract manufacturers to provide manufacturing services for our products. During the normal course of business, in order to manage manufacturing lead times and help ensure adequate component supply, we enter into agreements with contract manufacturers and suppliers that allow them to procure inventory based upon criteria as defined by us or that establish the parameters defining our requirements and our commitment to securing manufacturing capacity.

Our inventory purchase commitments are for short-term product manufacturing requirements as well as for commitments to suppliers to secure manufacturing capacity. Certain of our inventory purchase commitments with contract manufacturers and suppliers relate to arrangements to secure supply and pricing for certain product components for multi-year periods. A significant portion of our reported purchase commitments arising from these agreements are firm, noncancelable, and unconditional commitments. In certain instances, these agreements allow us the option to cancel, reschedule, and adjust our requirements based on our business needs prior to firm orders being placed.

Inventory and supply chain management remain areas of focus as we balance the need to maintain supply chain flexibility to help ensure competitive lead times with the risk of inventory obsolescence because of supply constraints, rapidly changing technology and customer requirements. We believe the amount of our inventory and inventory purchase commitments is appropriate for our current and expected customer demand and revenue levels.

Financing Receivables and Guarantees The following table summarizes our financing receivables (in millions):

	July 29, 2023	July 30, 2022	Increase (Decrease)
Loan receivables, net	**$ 5,857**	$ 6,739	$ (882)
Lease receivables, net	**978**	1,175	(197)
Total, net	**$ 6,835**	$ 7,914	$ (1,079)

Financing Receivables Our financing arrangements include loans and leases. Our loan receivables include customer financing for purchases of our hardware, software and services (including technical support and advanced services), and also may include additional funds for other costs associated with network installation and integration of our products and services. Lease receivables include sales-type leases. Arrangements related to leases are generally collateralized by a security interest in the underlying assets. Financing receivables decreased by 14%.

Financing Guarantees In the normal course of business, third parties may provide financing arrangements to our customers and channel partners under financing programs. The financing arrangements provided by third parties are related to leases and loans and typically have terms of up to three years. In some cases, we provide guarantees to third parties for these lease and loan arrangements. The financing arrangements to channel partners consist of revolving short-term financing provided by third parties, with payment terms generally ranging from 60 to 90 days. In certain instances, these financing arrangements result in a transfer of our receivables to the third party. The receivables are derecognized upon transfer, as these transfers qualify as true sales, and we receive payments for the receivables from the third party based on our standard payment terms.

The volume of channel partner financing was $32.1 billion, $27.9 billion, and $26.7 billion in fiscal 2023, 2022, and 2021, respectively. These financing arrangements facilitate the working capital requirements of the channel partners, and in some cases, we guarantee a portion of these arrangements. The balance of the channel partner financing subject to guarantees was $1.7 billion and $1.4 billion as of July 29, 2023 and July 30, 2022, respectively. We could be called upon to make payments under these guarantees in the event of nonpayment by the channel partners. Historically, our payments under these arrangements have been immaterial. Where we provide a guarantee, we defer the revenue associated with the channel partner financing arrangement in accordance with revenue recognition policies, or we record a liability for the fair value of the guarantees. In either case, the deferred revenue is recognized as revenue when the guarantee is removed. As of July 29, 2023, the total maximum potential future payments related to these guarantees was approximately $159 million, of which approximately $34 million was recorded as deferred revenue.

Borrowings

Senior Notes The following table summarizes the principal amount of our senior notes (in millions):

	Maturity Date	**July 29, 2023**	July 30, 2022
Senior notes:			
Fixed-rate notes:			
2.60%	February 28, 2023	**$ —**	$ 500
2.20%	September 20, 2023	**750**	750
3.625%	March 4, 2024	**1,000**	1,000
3.50%	June 15, 2025	**500**	500
2.95%	February 28, 2026	**750**	750
2.50%	September 20, 2026	**1,500**	1,500
5.90%	February 15, 2039	**2,000**	2,000
5.50%	January 15, 2040	**2,000**	2,000
Total		**$ 8,500**	$ 9,000

Interest is payable semiannually on each class of the senior fixed-rate notes, each of which is redeemable by us at any time, subject to a make-whole premium. We were in compliance with all debt covenants as of July 29, 2023.

Commercial Paper We have a short-term debt financing program in which up to $10.0 billion is available through the issuance of commercial paper notes. We use the proceeds from the issuance of commercial paper notes for general corporate purposes. We had no commercial paper outstanding as of July 29, 2023 and $0.6 billion outstanding as of July 30, 2022.

Credit Facility On May 13, 2021, we entered into a 5-year credit agreement with certain institutional lenders that provides for a $3.0 billion unsecured revolving credit facility that is scheduled to expire on May 13, 2026. As of July 29, 2023, we were in compliance with the required interest coverage ratio and the other covenants, and we had not borrowed any funds under the credit agreement. On April 18, 2023, we entered into an amendment to the credit agreement to replace the LIBOR index with Term Secured Overnight Financing Rate (SOFR).

Any advances under the 5-year credit agreement will accrue interest at rates that are equal to, based on certain conditions, either (a) with respect to loans in U.S. dollars, (i) Term SOFR (plus a 0.10% credit spread adjustment) or (ii) the Base Rate (to be defined as the highest of (x) the Bank of America prime rate, (y) the Federal Funds rate plus 0.50% and (z) Term SOFR plus 1.0%), (b) with respect to loans in Euros, EURIBOR, (c) with respect to loans in Yen, TIBOR and (d) with respect to loans in Pounds Sterling, SONIA, plus a margin that is based on our senior debt credit ratings as published by Standard & Poor's Financial Services, LLC and Moody's Investors Service, Inc., provided that in no event will the interest rate be less than 0.0%. We will pay a quarterly commitment fee during the term of the 5-year credit agreement which may vary depending on our senior debt credit ratings. In addition, the 5-year credit agreement incorporates certain sustainability-linked metrics. Specifically, our applicable interest rate and commitment fee are subject to upward or downward adjustments if we achieve, or fail to achieve, certain specified targets based on two key performance indicator metrics: (i) social impact and (ii) foam reduction. We may also, upon the agreement of either the then-existing lenders or additional lenders not currently parties to the agreement, increase the commitments under the credit facility by up to an additional $2.0 billion and, at our option, extend the maturity of the facility for an additional year up to two times. The credit agreement requires that we comply with certain covenants, including that we maintain an interest coverage ratio as defined in the agreement.

Remaining Performance Obligations The following table presents the breakdown of remaining performance obligations (in millions):

	July 29, 2023	July 30, 2022	Increase (Decrease)
Product	**$ 15,802**	$ 14,090	$ 1,712
Service	**19,066**	17,449	1,617
Total	**$ 34,868**	$ 31,539	$ 3,329
Short-term RPO	**$ 17,910**	$ 16,936	$ 974
Long-term RPO	**16,958**	14,603	2,355
Total	**$ 34,868**	$ 31,539	$ 3,329

Total remaining performance obligations increased 11% in fiscal 2023. Remaining performance obligations for product increased 12% and remaining performance obligations for service increased 9%, compared to fiscal 2022. We expect approximately 51% of total remaining performance obligations to be recognized as revenue over the next 12 months.

Deferred Revenue The following table presents the breakdown of deferred revenue (in millions):

	July 29, 2023	July 30, 2022	Increase (Decrease)
Product	**$ 11,505**	$ 10,427	$ 1,078
Service	**14,045**	12,837	1,208
Total	**$ 25,550**	$ 23,264	$ 2,286
Reported as:			
Current	**$ 13,908**	$ 12,784	$ 1,124
Noncurrent	**11,642**	10,480	1,162
Total	**$ 25,550**	$ 23,264	$ 2,286

Total deferred revenue increased 10% in fiscal 2023. The increase in deferred product revenue of 10% was primarily due to increased deferrals related to our recurring software offerings. The increase in deferred service revenue of 9% was driven by higher business volume and the impact of contract renewals, partially offset by amortization of deferred service revenue.

Contractual Obligations

The impact of contractual obligations on our liquidity and capital resources in future periods should be analyzed in conjunction with the factors that impact our cash flows from operations discussed previously. In addition, we plan for and measure our liquidity and capital resources through an annual budgeting process. The following table summarizes our contractual obligations at July 29, 2023 (in millions):

	PAYMENTS DUE BY PERIOD				
July 29, 2023	Total	Less than 1 Year	1 to 3 Years	3 to 5 Years	More than 5 Years
Operating leases	$ 1,116	$ 341	$ 426	$ 172	$ 177
Purchase commitments with contract manufacturers and suppliers	7,253	5,270	1,783	200	—
Other purchase obligations	2,476	1,222	976	265	13
Senior notes	8,500	1,750	1,250	1,500	4,000
Transition tax payable	5,456	1,364	4,092	—	—
Other long-term liabilities	1,365	—	215	166	984
Total by period	$ 26,166	$ 9,947	$ 8,742	$ 2,303	$ 5,174
Other long-term liabilities (uncertainty in the timing of future payments)	1,726				
Total	$ 27,892				

Operating Leases For more information on our operating leases, see Note 8 to the Consolidated Financial Statements.

Purchase Commitments with Contract Manufacturers and Suppliers We purchase components from a variety of suppliers and use several contract manufacturers to provide manufacturing services for our products. Our inventory purchase commitments are for short-term product manufacturing requirements as well as for commitments to suppliers to secure manufacturing capacity. Certain of our inventory purchase commitments with contract manufacturers and suppliers relate to arrangements to secure supply and pricing for certain product components for multi-year periods. A significant portion of our reported purchase commitments arising from these agreements are firm, noncancelable, and unconditional commitments. We record a liability for firm, noncancelable, and unconditional purchase commitments for quantities in excess of our future demand forecasts consistent with the valuation of our excess and obsolete inventory. See further discussion in “Inventory Supply Chain.”

Other Purchase Obligations Other purchase obligations represent an estimate of all contractual obligations in the ordinary course of business, other than operating leases and commitments with contract manufacturers and suppliers, for which we have not received the goods or services. Purchase orders are not included in the preceding table as they typically represent our authorization to purchase rather than binding contractual purchase obligations.

Long-Term Debt The amount of long-term debt in the preceding table represents the principal amount of the respective debt instruments. See Note 12 to the Consolidated Financial Statements.

Transition Tax Payable Transition tax payable represents future cash tax payments associated with the one-time U.S. transition tax on accumulated earnings for foreign subsidiaries as a result of the Tax Act.

Other Long-Term Liabilities Other long-term liabilities primarily include noncurrent income taxes payable, accrued liabilities for deferred compensation, deferred tax liabilities, and certain other long-term liabilities. Due to the uncertainty in the timing of future payments, our noncurrent income taxes payable of approximately $1.7 billion and deferred tax liabilities of $62 million were presented as one aggregated amount in the total column on a separate line in the preceding table. Noncurrent income taxes payable include uncertain tax positions. See Note 18 to the Consolidated Financial Statements.

Other Commitments

In connection with our acquisitions, we have agreed to pay certain additional amounts contingent upon the achievement of certain agreed-upon technology, development, product, or other milestones or the continued employment with us of certain employees of the acquired entities. See Note 14 to the Consolidated Financial Statements.

We also have certain funding commitments primarily related to our privately held investments, some of which may be based on the achievement of certain agreed-upon milestones or are required to be funded on demand. The funding commitments were $0.3 billion and $0.4 billion as of July 29, 2023 and July 30, 2022, respectively.

In the ordinary course of business, we have privately held investments and provide financing to certain customers. Certain of these investments are considered to be variable interest entities. We evaluate on an ongoing basis our privately held investments and customer financings, and we have determined that as of July 29, 2023 there were no material unconsolidated variable interest entities.

On an ongoing basis, we reassess our privately held investments and customer financings to determine if they are variable interest entities and if we would be regarded as the primary beneficiary pursuant to the applicable accounting guidance. As a result of this ongoing assessment, we may be required to make additional disclosures or consolidate these entities. Because we may not control these entities, we may not have the ability to influence these events.

We provide financing guarantees, which are generally for various third-party financing arrangements extended to our channel partners. We could be called upon to make payments under these guarantees in the event of nonpayment by the channel partners. See the previous discussion of these financing guarantees under “Financing Receivables and Guarantees.”

Liquidity and Capital Resource Requirements

Based on past performance and current expectations, we believe our cash and cash equivalents, investments, cash generated from operations, and ability to access capital markets and committed credit lines will satisfy, through at least the next 12 months, our liquidity requirements, both in total and domestically, including the following: working capital needs (including inventory and other supply related payments), capital expenditures, investment requirements, stock repurchases, cash dividends, contractual obligations, commitments, principal and interest payments on debt, pending acquisitions, future customer financings, and other liquidity requirements associated with our operations. We expect increased payments related to inventory and other supply related payments through at least the next 12 months. There are no other transactions, arrangements, or relationships with unconsolidated entities or other persons that are reasonably likely to materially affect the liquidity and the availability of, as well as our requirements for, capital resources.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Our financial position is exposed to a variety of risks, including interest rate risk, equity price risk, and foreign currency exchange risk.

Interest Rate Risk

Available-for-Sale Debt Investments We maintain an investment portfolio of various holdings, types, and maturities. Our primary objective for holding available-for-sale debt investments is to achieve an appropriate investment return consistent with preserving principal and managing risk. At any time, a sharp rise in market interest rates could have a material adverse impact on the fair value of our available-for-sale debt investment portfolio. Conversely, declines in interest rates, including the impact from lower credit spreads, could have a material adverse impact on interest income for our investment portfolio. We may utilize derivative instruments designated as hedging instruments to achieve our investment objectives. We had no outstanding hedging instruments for our available-for-sale debt investments as of July 29, 2023. Our available-for-sale debt investments are held for purposes other than trading. Our available-for-sale debt investments are not leveraged as of July 29, 2023. We monitor our interest rate and credit risks, including our credit exposures to specific rating categories and to individual issuers. We believe the overall credit quality of our portfolio is strong.

The following tables present the hypothetical fair values of our available-for-sale debt investments, including the hedging effects when applicable, as a result of selected potential market decreases and increases in interest rates. The market changes reflect immediate hypothetical parallel shifts in the yield curve of plus or minus 50 basis points (BPS), plus 100 BPS, and plus 150 BPS. The hypothetical fair values as of July 29, 2023 and July 30, 2022 are as follows (in millions):

	VALUATION OF SECURITIES GIVEN AN INTEREST RATE DECREASE OF X BASIS POINTS			**FAIR VALUE AS OF JULY 29, 2023**	VALUATION OF SECURITIES GIVEN AN INTEREST RATE INCREASE OF X BASIS POINTS		
	(150 BPS)	(100 BPS)	(50 BPS)		50 BPS	100 BPS	150 BPS
Available-for-sale debt investments	$15,901	$15,798	$15,695	**$15,592**	$15,489	$15,386	$15,284

	VALUATION OF SECURITIES GIVEN AN INTEREST RATE DECREASE OF X BASIS POINTS			FAIR VALUE AS OF JULY 30, 2022	VALUATION OF SECURITIES GIVEN AN INTEREST RATE INCREASE OF X BASIS POINTS		
	(150 BPS)	(100 BPS)	(50 BPS)		50 BPS	100 BPS	150 BPS
Available-for-sale debt investments	$12,263	$12,158	$12,052	$11,947	$11,841	$11,735	$11,630

Financing Receivables As of July 29, 2023, our financing receivables had a carrying value of $6.8 billion, compared with $7.9 billion as of July 30, 2022. As of July 29, 2023, a hypothetical 50 BPS increase or decrease in market interest rates would change the fair value of our financing receivables by a decrease or increase of approximately $0.1 billion, respectively.

Debt As of July 29, 2023, we had $8.5 billion in principal amount of senior fixed-rate notes outstanding. The carrying amount of the senior notes was $8.4 billion, and the related fair value based on market prices was $8.7 billion. As of July 29, 2023, a hypothetical 50 BPS increase or decrease in market interest rates would change the fair value of the fixed-rate debt, excluding the $1.5 billion of hedged debt, by a decrease or increase of approximately $0.3 billion, respectively. However, this hypothetical change in interest rates would not impact the interest expense on the fixed-rate debt that is not hedged.

Equity Price Risk

Marketable Equity Investments The fair value of our marketable equity investments is subject to market price volatility. We hold equity securities for strategic purposes or to diversify our overall investment portfolio. These equity securities are held for purposes other than trading. The total fair value of our marketable equity securities was $431 million and $241 million as of July 29, 2023 and July 30, 2022, respectively.

Privately Held Investments These investments are recorded in other assets in our Consolidated Balance Sheets. As of July 29, 2023, the total carrying amount of our investments in privately held investments was $1.8 billion, compared with $1.9 billion at July 30, 2022. Some of these companies in which we invested are in the startup or development stages. These investments are inherently risky because the markets for the technologies or products these companies are developing are typically in the early stages and may never materialize. We could lose our entire investment in these companies. Our evaluation of privately held investments is based on the fundamentals of the businesses invested in, including, among other factors, the nature of their technologies and potential for financial return.

Foreign Currency Exchange Risk

Our foreign exchange forward contracts outstanding at fiscal year-end are summarized in U.S. dollar equivalents as follows (in millions):

	July 29, 2023		July 30, 2022	
	Notional Amount	**Fair Value**	Notional Amount	Fair Value
Forward contracts:				
Purchased	**$ 3,014**	**$ (33)**	$ 2,578	$ (50)
Sold	**$ 2,406**	**$ 31**	$ 1,943	$ 50

We conduct business globally in numerous currencies. The direct effect of foreign currency fluctuations on revenue has not been material because our revenue is primarily denominated in U.S. dollars. However, if the U.S. dollar strengthens relative to other currencies, such strengthening could have an indirect effect on our revenue to the extent it raises the cost of our products to non-U.S. customers and thereby reduces demand. A weaker U.S. dollar could have the opposite effect. However, the precise indirect effect of currency fluctuations is difficult to measure or predict because our revenue is influenced by many factors in addition to the impact of such currency fluctuations.

Approximately 75% of our operating expenses are U.S.-dollar denominated. In fiscal 2023, foreign currency fluctuations, net of hedging, decreased our combined R&D, sales and marketing, and G&A expenses by approximately $364 million, or 2.0%, as compared with fiscal 2022. To reduce variability in operating expenses and service cost of sales caused by non-U.S.-dollar denominated operating expenses and costs, we may hedge certain forecasted foreign currency transactions with currency options and forward contracts. These hedging programs are not designed to provide foreign currency protection over long time horizons. In designing a specific hedging approach, we consider several factors, including offsetting exposures, significance of exposures, costs associated with entering into a particular hedge instrument, and potential effectiveness of the hedge. The gains and losses on foreign exchange contracts mitigate the effect of currency movements on our operating expenses and service cost of sales.

We also enter into foreign exchange forward and option contracts to reduce the short-term effects of foreign currency fluctuations on receivables and payables that are denominated in currencies other than the functional currencies of the entities. The market risks associated with these foreign currency receivables and payables relate primarily to variances from our forecasted foreign currency transactions and balances. We do not enter into foreign exchange forward or option contracts for speculative purposes.

Item 8. Financial Statements and Supplementary Data

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Cisco Systems, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Cisco Systems, Inc. and its subsidiaries (the "Company") as of July 29, 2023 and July 30, 2022, and the related consolidated statements of operations, of comprehensive income, of equity and of cash flows for each of the three years in the period ended July 29, 2023, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of July 29, 2023, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of July 29, 2023 and July 30, 2022, and the results of its operations and its cash flows for each of the three years in the period ended July 29, 2023 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of July 29, 2023, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

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

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

Critical Audit Matters

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

Revenue recognition — identification of contractual terms in certain customer arrangements

As described in Note 2 to the consolidated financial statements, management assesses relevant contractual terms in its customer arrangements to determine the transaction price and recognizes revenue upon transfer of control of the promised goods or services in an amount that reflects the consideration the Company expects to receive in exchange for those products or services. Management applies judgment in determining the transaction price which is dependent on the contractual terms. In order to determine the transaction price, management may be required to estimate variable consideration when determining the amount of revenue to recognize. For the year ended July 29, 2023, the Company's total revenue was $57.0 billion.

The principal considerations for our determination that performing procedures relating to the identification of contractual terms in certain customer arrangements is a critical audit matter are the significant judgment by management in identifying contractual terms due to the volume and customized nature of the Company's customer arrangements. This in turn led to significant auditor judgment and effort in performing procedures to evaluate whether the contractual terms used in the determination of the transaction price and the timing of revenue recognition were appropriately identified and determined by management.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the revenue recognition process, including those related to the identification of contractual terms in customer arrangements that impact the determination of the transaction price and revenue recognition. These procedures also included, among others, (i) testing the completeness and accuracy of management's identification of the contractual terms by examining customer arrangements on a test basis, and (ii) testing management's process for determining the appropriate amount and timing of revenue recognition based on the contractual terms identified in the customer arrangements.

/s/ PricewaterhouseCoopers LLP
San Jose, California
September 7, 2023

We have served as the Company's auditor since 1988.

Reports of Management

Statement of Management's Responsibility

Cisco's management has always assumed full accountability for maintaining compliance with our established financial accounting policies and for reporting our results with objectivity and the highest degree of integrity. It is critical for investors and other users of the Consolidated Financial Statements to have confidence that the financial information that we provide is timely, complete, relevant, and accurate. Management is responsible for the fair presentation of Cisco's Consolidated Financial Statements, prepared in accordance with accounting principles generally accepted in the United States of America, and has full responsibility for their integrity and accuracy.

Management, with oversight by Cisco's Board of Directors, has established and maintains a strong ethical climate so that our affairs are conducted to the highest standards of personal and corporate conduct. Management also has established an effective system of internal controls. Cisco's policies and practices reflect corporate governance initiatives that are compliant with the listing requirements of Nasdaq and the corporate governance requirements of the Sarbanes-Oxley Act of 2002.

We are committed to enhancing stockholder value and fully understand and embrace our fiduciary oversight responsibilities. We are dedicated to ensuring that our high standards of financial accounting and reporting, as well as our underlying system of internal controls, are maintained. Our culture demands integrity, and we have the highest confidence in our processes, our internal controls and our people, who are objective in their responsibilities and who operate under the highest level of ethical standards.

Management's Report on Internal Control over Financial Reporting

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

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

Management (with the participation of the principal executive officer and principal financial officer) conducted an evaluation of the effectiveness of Cisco's internal control over financial reporting based on the framework in *Internal Control—Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, management concluded that Cisco's internal control over financial reporting was effective as of July 29, 2023. PricewaterhouseCoopers LLP, an independent registered public accounting firm, has audited the effectiveness of Cisco's internal control over financial reporting and has issued a report on Cisco's internal control over financial reporting, which is included in their report on the preceding pages.

/S/ CHARLES H. ROBBINS	/S/ R. SCOTT HERREN
Charles H. Robbins	R. Scott Herren
Chair and Chief Executive Officer	Executive Vice President and Chief Financial Officer
September 7, 2023	September 7, 2023

CISCO SYSTEMS, INC.
Consolidated Balance Sheets
(in millions, except par value)

	July 29, 2023	July 30, 2022
ASSETS		
Current assets:		
Cash and cash equivalents	**$ 10,123**	$ 7,079
Investments	**16,023**	12,188
Accounts receivable, net of allowance of $85 at July 29, 2023 and $83 at July 30, 2022	**5,854**	6,622
Inventories	**3,644**	2,568
Financing receivables, net	**3,352**	3,905
Other current assets	**4,352**	4,355
Total current assets	**43,348**	36,717
Property and equipment, net	**2,085**	1,997
Financing receivables, net	**3,483**	4,009
Goodwill	**38,535**	38,304
Purchased intangible assets, net	**1,818**	2,569
Deferred tax assets	**6,576**	4,449
Other assets	**6,007**	5,957
TOTAL ASSETS	**$ 101,852**	$ 94,002
LIABILITIES AND EQUITY		
Current liabilities:		
Short-term debt	**$ 1,733**	$ 1,099
Accounts payable	**2,313**	2,281
Income taxes payable	**4,235**	961
Accrued compensation	**3,984**	3,316
Deferred revenue	**13,908**	12,784
Other current liabilities	**5,136**	5,199
Total current liabilities	**31,309**	25,640
Long-term debt	**6,658**	8,416
Income taxes payable	**5,756**	7,725
Deferred revenue	**11,642**	10,480
Other long-term liabilities	**2,134**	1,968
Total liabilities	**57,499**	54,229
Commitments and contingencies (Note 14)		
Equity:		
Cisco stockholders’ equity:		
Preferred stock, $0.001 par value: 5 shares authorized; none issued and outstanding	**—**	—
Common stock and additional paid-in capital, $0.001 par value: 20,000 shares authorized; 4,066 and 4,110 shares issued and outstanding at July 29, 2023 and July 30, 2022, respectively	**44,289**	42,714
Retained earnings (Accumulated deficit)	**1,639**	(1,319)
Accumulated other comprehensive loss	**(1,575)**	(1,622)
Total equity	**44,353**	39,773
TOTAL LIABILITIES AND EQUITY	**$ 101,852**	$ 94,002

See Notes to Consolidated Financial Statements.

CISCO SYSTEMS, INC.
Consolidated Statements of Operations
(in millions, except per-share amounts)

Years Ended	July 29, 2023	July 30, 2022	July 31, 2021
REVENUE:			
Product	$ 43,142	$ 38,018	$ 36,014
Service	13,856	13,539	13,804
Total revenue	56,998	51,557	49,818
COST OF SALES:			
Product	16,590	14,814	13,300
Service	4,655	4,495	4,624
Total cost of sales	21,245	19,309	17,924
GROSS MARGIN	35,753	32,248	31,894
OPERATING EXPENSES:			
Research and development	7,551	6,774	6,549
Sales and marketing	9,880	9,085	9,259
General and administrative	2,478	2,101	2,152
Amortization of purchased intangible assets	282	313	215
Restructuring and other charges	531	6	886
Total operating expenses	20,722	18,279	19,061
OPERATING INCOME	15,031	13,969	12,833
Interest income	962	476	618
Interest expense	(427)	(360)	(434)
Other income (loss), net	(248)	392	245
Interest and other income (loss), net	287	508	429
INCOME BEFORE PROVISION FOR INCOME TAXES	15,318	14,477	13,262
Provision for income taxes	2,705	2,665	2,671
NET INCOME	$ 12,613	$ 11,812	$ 10,591
Net income per share:			
Basic	$ 3.08	$ 2.83	$ 2.51
Diluted	$ 3.07	$ 2.82	$ 2.50
Shares used in per-share calculation:			
Basic	4,093	4,170	4,222
Diluted	4,105	4,192	4,236

See Notes to Consolidated Financial Statements.

CISCO SYSTEMS, INC.
Consolidated Statements of Comprehensive Income
(in millions)

Years Ended	July 29, 2023	July 30, 2022	July 31, 2021
Net income	**$ 12,613**	$ 11,812	$ 10,591
Available-for-sale investments:			
Change in net unrealized gains and losses, net of tax benefit (expense) of $35, $174, and $46 for fiscal 2023, 2022, and 2021, respectively	**(78)**	(557)	(95)
Net (gains) losses reclassified into earnings, net of tax expense (benefit) of $(4), $5, and $15 for fiscal 2023, 2022, and 2021, respectively	**17**	(4)	(38)
	(61)	(561)	(133)
Cash flow hedging instruments:			
Change in unrealized gains and losses, net of tax benefit (expense) of $(7), $(20), and $(4) for fiscal 2023, 2022, and 2021, respectively	**22**	67	16
Net (gains) losses reclassified into earnings, net of tax (benefit) expense of $15, $7, and $3 for fiscal 2023, 2022, and 2021, respectively	**(48)**	(22)	(11)
	(26)	45	5
Net change in cumulative translation adjustment and actuarial gains and losses, net of tax benefit (expense) of $19, $(44), and $(2) for fiscal 2023, 2022, and 2021, respectively	**134**	(689)	230
Other comprehensive income (loss)	**47**	(1,205)	102
Comprehensive income	**$ 12,660**	$ 10,607	$ 10,693

See Notes to Consolidated Financial Statements.

CISCO SYSTEMS, INC.
Consolidated Statements of Cash Flows
(in millions)

Years Ended	July 29, 2023	July 30, 2022	July 31, 2021
Cash flows from operating activities:			
Net income	**$ 12,613**	$ 11,812	$ 10,591
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation, amortization, and other	**1,726**	1,957	1,862
Share-based compensation expense	**2,353**	1,886	1,761
Provision (benefit) for receivables	**31**	55	(6)
Deferred income taxes	**(2,085)**	(309)	(384)
(Gains) losses on divestitures, investments and other, net	**206**	(453)	(354)
Change in operating assets and liabilities, net of effects of acquisitions and divestitures:			
Accounts receivable	**734**	(1,009)	(107)
Inventories	**(1,069)**	(1,030)	(244)
Financing receivables	**1,102**	1,241	1,577
Other assets	**5**	(1,615)	(797)
Accounts payable	**27**	(55)	(53)
Income taxes, net	**1,218**	(690)	(549)
Accrued compensation	**651**	(427)	643
Deferred revenue	**2,326**	1,328	1,560
Other liabilities	**48**	535	(46)
Net cash provided by operating activities	**19,886**	13,226	15,454
Cash flows from investing activities:			
Purchases of investments	**(10,871)**	(6,070)	(9,328)
Proceeds from sales of investments	**1,054**	2,660	3,373
Proceeds from maturities of investments	**5,978**	5,686	8,409
Acquisitions, net of cash and cash equivalents acquired and divestitures	**(301)**	(373)	(7,038)
Purchases of investments in privately held companies	**(185)**	(186)	(175)
Return of investments in privately held companies	**90**	237	194
Acquisition of property and equipment	**(849)**	(477)	(692)
Proceeds from sales of property and equipment	**3**	91	28
Other	**(26)**	(15)	(56)
Net cash provided by (used in) investing activities	**(5,107)**	1,553	(5,285)
Cash flows from financing activities:			
Issuances of common stock	**700**	660	643
Repurchases of common stock - repurchase program	**(4,293)**	(7,689)	(2,877)
Shares repurchased for tax withholdings on vesting of restricted stock units	**(597)**	(692)	(636)
Short-term borrowings, original maturities of 90 days or less, net	**(602)**	606	(5)
Issuances of debt	**—**	1,049	—
Repayments of debt	**(500)**	(3,550)	(3,000)
Dividends paid	**(6,302)**	(6,224)	(6,163)
Other	**(32)**	(122)	(59)
Net cash used in financing activities	**(11,626)**	(15,962)	(12,097)
Effect of foreign currency exchange rate changes on cash, cash equivalents, restricted cash and restricted cash equivalents	**(105)**	(180)	58
Net increase (decrease) in cash, cash equivalents, restricted cash and restricted cash equivalents	**3,048**	(1,363)	(1,870)
Cash, cash equivalents, restricted cash and restricted cash equivalents, beginning of fiscal year	**8,579**	9,942	11,812
Cash, cash equivalents, restricted cash and restricted cash equivalents, end of fiscal year	**$ 11,627**	$ 8,579	$ 9,942
Supplemental cash flow information:			
Cash paid for interest	**$ 376**	$ 355	$ 438
Cash paid for income taxes, net	**$ 3,571**	$ 3,663	$ 3,604

See Notes to Consolidated Financial Statements.

CISCO SYSTEMS, INC.
Consolidated Statements of Equity
(in millions, except per-share amounts)

	Shares of Common Stock	Common Stock and Additional Paid-In Capital	Retained Earnings (Accumulated Deficit)	Accumulated Other Comprehensive Income (Loss)	Total Equity
BALANCE AT JULY 25, 2020	4,237	$ 41,202	$ (2,763)	$ (519)	$ 37,920
Net income			10,591		10,591
Other comprehensive income (loss)				102	102
Issuance of common stock	58	643			643
Repurchase of common stock	(64)	(625)	(2,277)		(2,902)
Shares repurchased for tax withholdings on vesting of restricted stock units and other	(14)	(636)			(636)
Cash dividends declared ($1.46 per common share)			(6,166)		(6,166)
Effect of adoption of accounting standard			(38)		(38)
Share-based compensation		1,761			1,761
Other		1	(1)		—
BALANCE AT JULY 31, 2021	4,217	$ 42,346	$ (654)	$ (417)	$ 41,275
Net income			11,812		11,812
Other comprehensive income (loss)				(1,205)	(1,205)
Issuance of common stock	54	660			660
Repurchase of common stock	(146)	(1,490)	(6,244)		(7,734)
Shares repurchased for tax withholdings on vesting of restricted stock units and other	(13)	(692)			(692)
Cash dividends declared ($1.50 per common share)			(6,224)		(6,224)
Share-based compensation		1,886			1,886
Other	(2)	4	(9)		(5)
BALANCE AT JULY 30, 2022	**4,110**	**$ 42,714**	**$ (1,319)**	**$ (1,622)**	**$ 39,773**
Net income			**12,613**		**12,613**
Other comprehensive income (loss)				**47**	**47**
Issuance of common stock	**57**	**700**			**700**
Repurchase of common stock	**(88)**	**(930)**	**(3,341)**		**(4,271)**
Shares repurchased for tax withholdings on vesting of restricted stock units and other	**(13)**	**(551)**			**(551)**
Cash dividends declared ($1.54 per common share)			**(6,302)**		**(6,302)**
Share-based compensation		**2,353**			**2,353**
Other		**3**	**(12)**		**(9)**
BALANCE AT JULY 29, 2023	**4,066**	**$ 44,289**	**$ 1,639**	**$ (1,575)**	**$ 44,353**

See Notes to Consolidated Financial Statements.

CISCO SYSTEMS, INC.
Notes to Consolidated Financial Statements

1. Basis of Presentation

The fiscal year for Cisco Systems, Inc. (the "Company," "Cisco," "we," "us," or "our") is the 52 or 53 weeks ending on the last Saturday in July. Fiscal 2023 and fiscal 2022 were each 52-week fiscal years, and fiscal 2021 was a 53-week fiscal year. The Consolidated Financial Statements include our accounts and those of our subsidiaries. All intercompany accounts and transactions have been eliminated. We conduct business globally and are primarily managed on a geographic basis in the following three geographic segments: the Americas; Europe, Middle East, and Africa (EMEA); and Asia Pacific, Japan, and China (APJC).

Our consolidated financial statements include our accounts and investments consolidated under the voting interest model. The noncontrolling interests attributed to these investments are not presented as a separate component in the equity section of the Consolidated Balance Sheets as these amounts are not material for any of the fiscal periods presented. The share of earnings attributable to the noncontrolling interests are not presented separately in the Consolidated Statements of Operations as these amounts are not material for any of the fiscal periods presented.

Certain reclassifications have been made to the amounts for prior years in order to conform to the current year's presentation. We have evaluated subsequent events through the date that the financial statements were issued.

2. Summary of Significant Accounting Policies

(a) Cash and Cash Equivalents We consider all highly liquid investments purchased with an original or remaining maturity of three months or less at the date of purchase to be cash equivalents. Cash and cash equivalents are maintained with various financial institutions.

(b) Available-for-Sale Debt Investments We classify our investments in fixed income securities as available-for-sale debt investments. Our available-for-sale debt investments primarily consist of U.S. government, U.S. government agency, non-U.S. government and agency, corporate debt, U.S. agency mortgage-backed securities, commercial paper and certificates of deposit. These available-for-sale debt investments are primarily held in the custody of a major financial institution. A specific identification method is used to determine the cost basis of available-for-sale debt investments sold. These investments are recorded in the Consolidated Balance Sheets at fair value. Unrealized gains and losses on these investments are included as a separate component of accumulated other comprehensive income (loss) (AOCI), net of tax. We classify our investments as current based on the nature of the investments and their availability for use in current operations.

(c) Equity Instruments Our equity investments are accounted for as follows:

- *Marketable equity securities* have readily determinable fair value (RDFV) that are measured and recorded at fair value through income.
- *Non-marketable equity securities* do not have RDFV and are measured using a measurement alternative recorded at cost less any impairment, plus or minus changes resulting from qualifying observable price changes. For certain of these securities, we have elected to apply the net asset value (NAV) practical expedient. The NAV is the estimated fair value of these investments.
- *Equity method investments* are securities we do not control, but are able to exert significant influence over the investee. These investments are measured at cost less any impairment, plus or minus our share of equity method investee income or loss.

(d) Impairments of Investments For our available-for-sale debt securities in an unrealized loss position, we determine whether a credit loss exists. In this assessment, among other factors, we consider the extent to which the fair value is less than the amortized cost, any changes to the rating of the security by a rating agency, and adverse conditions specifically related to the security. If factors indicate a credit loss exists, an allowance for credit loss is recorded to other income (loss), net, limited by the amount that the fair value is less than the amortized cost basis. The amount of fair value change relating to all other factors will be recognized in other comprehensive income (OCI).

We hold non-marketable equity and other investments ("privately held investments") which are included in other assets in the Consolidated Balance Sheets. We monitor these investments for impairments and make reductions in carrying values if we determine that an impairment charge is required based primarily on the financial condition and near-term prospects of these companies.

(e) Inventories Inventories are stated at the lower of cost or net realizable value. Cost is computed using standard cost, which approximates actual cost, on a first-in, first-out basis. We provide inventory write-downs based on excess and obsolete inventories determined primarily by future demand forecasts. The write-down is measured as the difference between the cost of the inventory and net realizable value based upon assumptions about future demand and charged to the provision for inventory, which is a component of cost of sales. At the point of the loss recognition, a new, lower cost basis for that inventory is established, and subsequent changes in facts and circumstances do not result in the restoration or increase in that newly established cost basis. In addition, we record a liability for firm, noncancelable, and unconditional purchase commitments with contract manufacturers and suppliers for quantities in excess of our future demand forecasts consistent with our valuation of excess and obsolete inventory.

(f) Allowance for Accounts Receivable, Contract Assets and Financing Receivables We estimate our allowances for credit losses using relevant available information from internal and external sources, related to past events, current conditions and reasonable and supportable forecasts. Historical credit loss experience provides the basis for the estimation of expected credit losses. When assessing for credit losses, we determine collectibility by pooling our assets with similar characteristics.

The allowances for credit losses are each measured on a collective basis when similar risk characteristics exist. Our internal credit risk ratings are categorized as 1 through 10, with the lowest credit risk rating representing the highest quality. Assets that do not share risk characteristics are evaluated on an individual basis. The allowances for credit losses are each measured by multiplying the exposure probability of default, the probability the asset will default within a given time frame, by the loss given default rate, the percentage of the asset not expected to be collected due to default, based on the pool of assets.

Probability of default rates are published quarterly by third-party credit agencies. Adjustments to our internal credit risk ratings may take into account including, but not limited to, various customer-specific factors, the potential sovereign risk of the geographic locations in which the customer is operating and macroeconomic conditions. These factors are updated regularly or when facts and circumstances indicate that an update is deemed necessary.

(g) Financing Receivables and Guarantees We provide financing arrangements, including loan receivables and lease receivables, for certain qualified end-user customers to build, maintain, and upgrade their networks. Loan receivables represent financing arrangements related to the sale of our hardware, software, and services (including technical support and advanced services), and also may include additional funding for other costs associated with network installation and integration of our products and services. Loan receivables have terms of one year to three years on average. Lease receivables represent sales-type leases resulting from the sale of Cisco's and complementary third-party products and are typically collateralized by a security interest in the underlying assets. Lease receivables consist of arrangements with terms of four years on average.

Outstanding financing receivables that are aged 31 days or more from the contractual payment date are considered past due. We do not accrue interest on financing receivables that are considered impaired and more than 120 days past due unless either the receivable has not been collected due to administrative reasons or the receivable is well secured and in the process of collection. Financing receivables may be placed on nonaccrual status earlier if, in management's opinion, a timely collection of the full principal and interest becomes uncertain. After a financing receivable has been categorized as nonaccrual, interest will be recognized when cash is received. A financing receivable may be returned to accrual status after all of the customer's delinquent balances of principal and interest have been settled, and the customer remains current for an appropriate period.

We facilitate arrangements for third-party financing extended to channel partners, consisting of revolving short-term financing, generally with payment terms ranging from 60 to 90 days. In certain instances, these financing arrangements result in a transfer of our receivables to the third party. The receivables are derecognized upon transfer, as these transfers qualify as true sales, and we receive a payment for the receivables from the third party based on our standard payment terms. These financing arrangements facilitate the working capital requirements of the channel partners, and, in some cases, we guarantee a portion of these arrangements. We could be called upon to make payments under these guarantees in the event of nonpayment by the channel partners. Deferred revenue relating to these financing arrangements is recorded in accordance with revenue recognition policies or for the fair value of the financing guarantees.

(h) Leases We lease real estate, information technology (IT) and other equipment and vehicles. We also have arrangements with certain suppliers and contract manufacturers which includes the leasing of dedicated space and equipment costs. Our leases have the option to extend or terminate the lease when it is reasonably certain that we will exercise that option.

As a lessee, we determine if an arrangement is a lease at commencement. Our ROU lease assets represent our right to use an underlying asset for the lease term and lease liabilities represent our obligation to make lease payments related to the lease. Operating lease ROU assets and liabilities are recognized at the commencement date based on the present value of lease payments over the lease term. We use incremental borrowing rates based on information available at the commencement date to determine the present value of our lease payments. Certain of our lease agreements contain variable lease payments. Our variable lease payments can fluctuate depending on the level of activity or the cost of certain services where we have elected to combine lease and non-lease components. While these payments are not included as part of our lease liabilities, they are recognized as variable lease expense in the period they are incurred.

We provide leasing of our equipment and complementary third-party products primarily through our channel partners and distributors, for which the income arising from these leases is recognized through interest income. As a lessor, we determine if an arrangement is a lease at inception. We provide leasing arrangements for our equipment to certain qualified customers. Our lease portfolio primarily consists of sales-type leases. We allocate the consideration in a bundled contract with our customers based on relative standalone selling prices of our lease and non-lease components. The residual value on our leased equipment is determined at the inception of the lease based on an analysis of estimates of the value of equipment, market factors and historical customer behavior. Residual value estimates are reviewed on a periodic basis and other-than-temporary declines are expensed in the period they occur. Our leases generally provide an end-of-term option for the customer to extend the lease under mutually-agreed terms, return the leased equipment, or purchase the equipment for either the then-market value of the equipment or a pre-determined purchase price. If a customer chooses to terminate their lease prior to the original end of term date, the customer is required to pay all remaining lease payments in full.

(i) Depreciation and Amortization Property and equipment are stated at cost, less accumulated depreciation or amortization, whenever applicable. Depreciation and amortization expenses for property and equipment were approximately $0.7 billion, $0.8 billion, and $0.8 billion for fiscal 2023, 2022, and 2021, respectively. Depreciation and amortization are computed using the straight-line method, generally over the following periods:

Asset Category	Period
Buildings	25 years
Building improvements	10 years
Leasehold improvements	Shorter of remaining lease term or up to 10 years
Computer equipment and related software	30 to 36 months
Production, engineering, and other equipment	Up to 5 years
Operating lease assets	Based on lease term
Furniture and fixtures	5 years

(j) Business Combinations We allocate the fair value of the purchase consideration of our acquisitions to the tangible assets, liabilities, and intangible assets acquired, including in-process research and development (IPR&D), based on their estimated fair values. The excess of the fair value of purchase consideration over the fair values of these identifiable assets and liabilities is recorded as goodwill. IPR&D is initially capitalized at fair value as an intangible asset with an indefinite life and assessed for impairment thereafter. When an IPR&D project is completed, the IPR&D is reclassified as an amortizable purchased intangible asset and amortized over the asset's estimated useful life. Acquisition-related expenses and related restructuring costs are recognized separately from the business combination and are expensed as incurred.

(k) Goodwill and Purchased Intangible Assets Goodwill is tested for impairment on an annual basis in the fourth fiscal quarter and, when specific circumstances dictate, between annual tests. When impaired, the carrying value of goodwill is written down to fair value. Identifying a potential impairment consists of comparing the fair value of a reporting unit with its carrying amount, including goodwill. Purchased intangible assets with finite lives are carried at cost, less accumulated amortization. Amortization is computed over the estimated useful lives of the respective assets. See "Long-Lived Assets" for our policy regarding impairment testing of purchased intangible assets with finite lives. Purchased intangible assets with indefinite lives are assessed for potential impairment annually or when events or circumstances indicate that their carrying amounts might be impaired.

(l) Long-Lived Assets Long-lived assets that are held and used by us are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. Determination of recoverability of long-lived assets is based on an estimate of the undiscounted future cash flows resulting from the use of the asset and its eventual disposition. Measurement of an impairment loss for long-lived assets that management expects to hold and use is based on the difference between the fair value of the asset and its carrying value. Long-lived assets to be disposed of are reported at the lower of carrying amount or fair value less costs to sell.

(m) Fair Value Fair value is defined as the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. When determining the fair value measurements for assets and liabilities required or permitted to be either recorded or disclosed at fair value, we consider the principal or most advantageous market in which we would transact, and we also consider assumptions that market participants would use when pricing the asset or liability.

The accounting guidance for fair value measurement requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The standard establishes a fair value hierarchy based on the level of independent, objective evidence surrounding the inputs used to measure fair value. A financial instrument's categorization within the fair value hierarchy is based upon the lowest level of input that is significant to the fair value measurement.

The fair value hierarchy is as follows:

Level 1 applies to assets or liabilities for which there are quoted prices in active markets for identical assets or liabilities.

Level 2 applies to assets or liabilities for which there are inputs other than quoted prices that are observable for the asset or liability such as quoted prices for similar assets or liabilities in active markets; quoted prices for identical assets or liabilities in markets with insufficient volume or infrequent transactions (less active markets); or model-derived valuations in which significant inputs are observable or can be derived principally from, or corroborated by, observable market data. We use inputs such as actual trade data, benchmark yields, broker/dealer quotes, and other similar data, which are obtained from quoted market prices, independent pricing vendors, or other sources, to determine the ultimate fair value of assets or liabilities.

Level 3 applies to assets or liabilities for which there are unobservable inputs to the valuation methodology that are significant to the measurement of the fair value of the assets or liabilities. The fair values are determined based on model-based techniques such as discounted cash flow models using inputs that we could not corroborate with market data.

(n) Derivative Instruments   We recognize derivative instruments as either assets or liabilities and measure those instruments at fair value. The accounting for changes in the fair value of a derivative depends on the intended use of the derivative and the resulting designation. For a derivative instrument designated as a fair value hedge, the gain or loss is recognized in earnings in the period of change together with the offsetting loss or gain on the hedged item attributed to the risk being hedged. For a derivative instrument designated as a cash flow hedge, the gain or loss is initially reported as a component of AOCI and subsequently reclassified into earnings when the hedged exposure affects earnings. For a derivative instrument designated as a net investment hedge of our foreign operations, the gain or loss is recorded in the cumulative translation adjustment within AOCI together with the offsetting loss or gain of the hedged exposure of the underlying foreign operations. For derivative instruments that are not designated as accounting hedges, changes in fair value are recognized in earnings in the period of change. We record derivative instruments in the statements of cash flows to operating, investing, or financing activities consistent with the cash flows of the hedged item.

Hedge effectiveness for foreign exchange forward contracts used as cash flow hedges is assessed by comparing the change in the fair value of the hedge contract with the change in the fair value of the forecasted cash flows of the hedged item. Hedge effectiveness for equity forward contracts and foreign exchange net investment hedge forward contracts is assessed by comparing changes in fair value due to changes in spot rates for both the derivative and the hedged item. For foreign exchange option contracts, hedge effectiveness is assessed based on the hedging instrument's entire change in fair value. Hedge effectiveness for interest rate swaps is assessed by comparing the change in fair value of the swap with the change in the fair value of the hedged item due to changes in the benchmark interest rate.

(o) Foreign Currency Translation   Assets and liabilities of non-U.S. subsidiaries that operate in a local currency environment, where that local currency is the functional currency, are translated to U.S. dollars at exchange rates in effect at the balance sheet date, with the resulting translation adjustments directly recorded to a separate component of AOCI. Income and expense accounts are translated at average exchange rates during the year. Remeasurement adjustments are recorded in other income (loss), net.

(p) Concentrations of Risk   Cash and cash equivalents are maintained with several financial institutions. Deposits held with banks may exceed the amount of insurance provided on such deposits. Generally, these deposits may be redeemed upon demand and are maintained with financial institutions with reputable credit and therefore bear minimal credit risk. We seek to mitigate our credit risks by spreading such risks across multiple counterparties and monitoring the risk profiles of these counterparties.

We perform ongoing credit evaluations of our customers and, with the exception of certain financing transactions, do not require collateral from our customers. We receive certain of our components from sole suppliers. Additionally, we rely on a limited number of contract manufacturers and suppliers to provide manufacturing services for our products. The inability of a contract manufacturer or supplier to fulfill our supply requirements could materially impact future operating results.

(q) Revenue Recognition   We enter into contracts with customers that can include various combinations of products and services which are generally distinct and accounted for as separate performance obligations. As a result, our contracts may contain multiple performance obligations. We determine whether arrangements are distinct based on whether the customer can benefit from the product or service on its own or together with other resources that are readily available and whether our commitment to transfer the product or service to the customer is separately identifiable from other obligations in the contract. We classify our hardware, perpetual software licenses, and SaaS as distinct performance obligations. Term software licenses represent multiple obligations, which include software licenses and software maintenance. In transactions where we deliver hardware or software, we are typically the principal and we record revenue and costs of goods sold on a gross basis. We refer to our term software licenses, security software licenses, SaaS, and associated service arrangements as subscription offers.

We recognize revenue upon transfer of control of promised goods or services in a contract with a customer in an amount that reflects the consideration we expect to receive in exchange for those products or services. Transfer of control occurs once the customer has the contractual right to use the product, generally upon shipment, electronic delivery (or when the software is available for download by the customer), or once title and risk of loss has transferred to the customer. Transfer of control can also occur over time for software maintenance and services as the customer receives the benefit over the contract term. Our hardware and perpetual software licenses are distinct performance obligations where revenue is recognized upfront upon transfer of control. Term software licenses include multiple performance obligations where the term licenses are recognized upfront upon transfer of control, with the associated software maintenance revenue recognized ratably over the contract term as services and software updates are provided. SaaS arrangements do not include the right for the customer to take possession of the software during the term, and therefore have one distinct performance obligation which is satisfied over time with revenue recognized ratably over the contract term as the customer consumes the services. On our product sales, we record consideration from shipping and handling on a gross basis within net product sales. We record our revenue net of any associated sales taxes.

An allowance for future sales returns is established based on historical trends in product return rates. The allowance for future sales returns as of July 29, 2023 and July 30, 2022 was $39 million and $43 million, respectively, and was recorded as a reduction of our accounts receivable and revenue.

Significant Judgments

Revenue is allocated among these performance obligations in a manner that reflects the consideration that we expect to be entitled to for the promised goods or services based on standalone selling prices (SSP). SSP is estimated for each distinct performance obligation and judgment may be required in their determination. The best evidence of SSP is the observable price of a product or service when we sell the goods separately in similar circumstances and to similar customers. In instances where SSP is not directly observable, we determine SSP using information that may include market conditions and other observable inputs.

We assess relevant contractual terms in our customer contracts to determine the transaction price. We apply judgment in identifying contractual terms and determining the transaction price as we may be required to estimate variable consideration when determining the amount of revenue to recognize. Variable consideration includes potential contractual penalties and various rebate, cooperative marketing and other incentive programs that we offer to our distributors, channel partners and customers. When determining the amount of revenue to recognize, we estimate the expected usage of these programs, applying the expected value or most likely estimate and update the estimate at each reporting period as actual utilization becomes available. We also consider the customers' right of return in determining the transaction price, where applicable.

We assess certain software licenses, such as for security software, that contain critical updates or upgrades which customers can download throughout the contract term. Without these updates or upgrades, the functionality of the software would diminish over a relatively short time period. These updates or upgrades provide the customer the full functionality of the purchased security software licenses and are required to maintain the security license's utility as the risks and threats in the environment are rapidly changing. In these circumstances, the revenue from these software arrangements is recognized as a single performance obligation satisfied over the contract term.

(r) Advertising Costs We expense all advertising costs as incurred. Advertising costs included within sales and marketing expenses were approximately $205 million, $219 million, and $268 million for fiscal 2023, 2022, and 2021, respectively.

(s) Share-Based Compensation Expense We measure and recognize the compensation expense for all share-based awards made to employees and directors, including employee stock options, restricted stock units (RSUs), performance-based restricted stock units (PRSUs), and employee stock purchases related to the Employee Stock Purchase Plan (Employee Stock Purchase Rights) based on estimated fair values. Share-based compensation expense is reduced for forfeitures as they occur.

(t) Software Development Costs Software development costs, including costs to develop software sold, leased, or otherwise marketed, that are incurred subsequent to the establishment of technological feasibility are capitalized. Costs incurred during the application development stage for internal-use software and cloud-based applications are capitalized. Such software development costs capitalized during the periods presented were not material.

(u) Income Taxes Income tax expense is based on pretax financial accounting income. Deferred tax assets and liabilities are recognized for the expected tax consequences of temporary differences between the tax bases of assets and liabilities and their reported amounts. Valuation allowances are recorded to reduce deferred tax assets to the amount that will more likely than not be realized.

We account for uncertainty in income taxes using a two-step approach to recognizing and measuring uncertain tax positions. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon settlement. We classify the liability for unrecognized tax benefits as current to the extent that we anticipate payment (or receipt) of cash within one year. Interest and penalties related to uncertain tax positions are recognized in the provision for income taxes.

(v) Computation of Net Income per Share   Basic net income per share is computed using the weighted-average number of common shares outstanding during the period. Diluted net income per share is computed using the weighted-average number of common shares and dilutive potential common shares outstanding during the period. Diluted shares outstanding includes the dilutive effect of in-the-money options, unvested restricted stock, and restricted stock units. The dilutive effect of such equity awards is calculated based on the average share price for each fiscal period using the treasury stock method. Under the treasury stock method, the amount the employee must pay for exercising stock options and the amount of compensation cost for future service that we have not yet recognized are collectively assumed to be used to repurchase shares.

(w) Consolidation of Variable Interest Entities   Our approach in assessing the consolidation requirement for variable interest entities focuses on identifying which enterprise has the power to direct the activities that most significantly impact the variable interest entity’s economic performance and which enterprise has the obligation to absorb losses or the right to receive benefits from the variable interest entity. Should we conclude that we are the primary beneficiary of a variable interest entity, the assets, liabilities, and results of operations of the variable interest entity will be included in our Consolidated Financial Statements.

(x) Use of Estimates   The preparation of financial statements and related disclosures in conformity with accounting principles generally accepted in the United States requires management to make estimates and judgments that affect the amounts reported in the Consolidated Financial Statements and accompanying notes. Estimates are used for the following, among others:

- Revenue recognition
- Allowances for accounts receivable, sales returns, and financing receivables
- Inventory valuation and liability for purchase commitments with contract manufacturers and suppliers
- Loss contingencies and product warranties
- Fair value measurements
- Goodwill and purchased intangible asset impairments
- Income taxes

The actual results that we experience may differ materially from our estimates.

(y) Recent Accounting Standards or Updates Not Yet Effective as of Fiscal Year End

Reference Rate Reform In March 2020, the Financial Accounting Standards Board issued an accounting standard update and subsequent amendments that provide optional expedients and exceptions to the current guidance on contract modification and hedging relationships to ease the financial reporting burden of the expected market transition from the London InterBank Offered Rate (LIBOR) and other interbank offered rates to alternative reference rates. This accounting standard update was effective upon issuance and may be applied prospectively through December 31, 2024. We adopted this accounting standard update in fiscal 2023 and it did not have a material impact on our Consolidated Financial Statements upon adoption.

3. Revenue

(a) Disaggregation of Revenue

We disaggregate our revenue into groups of similar products and services that depict the nature, amount, and timing of revenue and cash flows for our various offerings. The sales cycle, contractual obligations, customer requirements, and go-to-market strategies differ for each of our product categories, resulting in different economic risk profiles for each category.

The following table presents this disaggregation of revenue (in millions):

Years Ended	July 29, 2023	July 30, 2022	July 31, 2021
Product revenue:			
Secure, Agile Networks	**$ 29,105**	$ 23,831	$ 22,725
Internet for the Future	**5,306**	5,276	4,511
Collaboration	**4,052**	4,472	4,727
End-to-End Security	**3,859**	3,699	3,382
Optimized Application Experiences	**811**	729	654
Other Products	**9**	11	15
Total Product	**43,142**	38,018	36,014
Services	**13,856**	13,539	13,804
Total	**$ 56,998**	$ 51,557	$ 49,818

Amounts may not sum due to rounding. We have made certain reclassifications to the product revenue amounts for prior periods to conform to the current year presentation.

Secure, Agile Networks consists of our core networking technologies of switching, enterprise routing, wireless, and compute products. These technologies consist of both hardware and software offerings, including software licenses and SaaS, that help our customers build networks, automate, orchestrate, integrate, and digitize data. Our hardware and perpetual software in this category are distinct performance obligations where revenue is recognized upfront upon transfer of control. Term software licenses are multiple performance obligations where the term license is recognized upfront upon transfer of control with the associated software maintenance revenue recognized ratably over the contract term. SaaS arrangements in this category have one distinct performance obligation which is satisfied over time with revenue recognized ratably over the contract term.

Internet for the Future consists of our routed optical networking, 5G, silicon, and optics solutions. These products consist primarily of both hardware and software offerings, including software licenses and SaaS. Our hardware and perpetual software in this category are distinct performance obligations where revenue is recognized upfront upon transfer of control. Term software licenses are multiple performance obligations where the term license is recognized upfront upon transfer of control with the associated software maintenance revenue recognized ratably over the contract term. SaaS arrangements in this category have one distinct performance obligation which is satisfied over time with revenue recognized ratably over the contract term.

Collaboration consists of our Meetings, Collaboration Devices, Calling, Contact Center and CPaaS offerings. These products consist primarily of software offerings, including software licenses and SaaS, as well as hardware. Our perpetual software and hardware in this category are distinct performance obligations where revenue is recognized upfront upon transfer of control. Term software licenses are multiple performance obligations where the term license is recognized upfront upon transfer of control with the associated software maintenance revenue recognized ratably over the contract term. SaaS arrangements in this category have one distinct performance obligation which is satisfied over time with revenue recognized ratably over the contract term.

End-to-End Security consists of our Cloud and Application Security, Industrial Security, Network Security, and User and Device Security offerings. These products consist of both hardware and software offerings, including software licenses and SaaS. Updates and upgrades for the term software licenses are critical for our software to perform its intended commercial purpose because of the continuous need for our software to secure our customers' network environments against frequent threats. Therefore, security software licenses are generally represented by a single distinct performance obligation with revenue recognized ratably over the contract term. Our hardware and perpetual software in this category are distinct performance obligations where revenue is recognized upfront upon transfer of control. SaaS arrangements in this category have one distinct performance obligation which is satisfied over time with revenue recognized ratably over the contract term.

Optimized Application Experiences consists of our full stack observability and network assurance offerings. These products consist primarily of software offerings, including software licenses and SaaS. Our perpetual software in this category are distinct performance obligations where revenue is recognized upfront upon transfer of control. Term software licenses are multiple performance obligations where the term license is recognized upfront upon transfer of control with the associated software maintenance revenue recognized ratably over the contract term. SaaS arrangements in this category have one distinct performance obligation which is satisfied over time with revenue recognized ratably over the contract term.

In addition to our product offerings, we provide a broad range of service and support options for our customers, including technical support services and advanced services. Technical support services represent the majority of these offerings which are distinct performance obligations that are satisfied over time with revenue recognized ratably over the contract term. Advanced services are distinct performance obligations that are satisfied over time with revenue recognized as services are delivered.

The sales arrangements as discussed above are typically made pursuant to customer purchase orders based on master purchase or partner agreements. Cash is received based on our standard payment terms which is typically 30 days. We provide financing arrangements to customers for all of our hardware, software and service offerings. Refer to Note 9 for additional information. For these arrangements, cash is typically received over time.

(b) Contract Balances

Accounts Receivable

Accounts receivable, net was $5.9 billion as of July 29, 2023 compared to $6.6 billion as of July 30, 2022, as reported on the Consolidated Balance Sheets.

The allowances for credit loss for our accounts receivable are summarized as follows (in millions):

	July 29, 2023	July 30, 2022	July 31, 2021
Allowance for credit loss at beginning of fiscal year	**$ 83**	$ 109	$ 143
Provisions (benefits)	**39**	64	21
Recoveries (write-offs), net	**(37)**	(81)	(29)
Foreign exchange and other	**—**	(9)	(26)
Allowance for credit loss at end of fiscal year	**$ 85**	$ 83	$ 109

Contract Assets and Liabilities

Gross contract assets by our internal risk ratings are summarized as follows (in millions):

	July 29, 2023	July 30, 2022
1 to 4	**$ 672**	$ 414
5 to 6	**954**	814
7 and Higher	**60**	158
Total	**$ 1,686**	$ 1,386

Contract assets consist of unbilled receivables and are recorded when revenue is recognized in advance of scheduled billings to our customers. These amounts are primarily related to software and service arrangements where transfer of control has occurred but we have not yet invoiced. As of July 29, 2023 and July 30, 2022, our contract assets for these unbilled receivables, net of allowances, were $1.6 billion and $1.3 billion, respectively, and were included in other current assets and other assets.

Contract liabilities consist of deferred revenue. Deferred revenue was $25.6 billion as of July 29, 2023 compared to $23.3 billion as of July 30, 2022. We recognized approximately $12.7 billion of revenue during fiscal 2023 that was included in the deferred revenue balance at July 30, 2022.

(c) Capitalized Contract Acquisition Costs

We capitalize direct and incremental costs incurred to acquire contracts, primarily sales commissions, for which the associated revenue is expected to be recognized in future periods. We incur these costs in connection with both initial contracts and renewals. These costs are initially deferred and typically amortized over the term of the customer contract which corresponds to the period of benefit. Deferred sales commissions were $1.1 billion and $1.0 billion as of July 29, 2023 and July 30, 2022, respectively, and were included in other current assets and other assets. The amortization expense associated with these costs was $723 million and $679 million for fiscal 2023 and 2022, respectively, and was included in sales and marketing expenses.

4. Acquisitions and Divestitures

(a) Acquisition Summary

We completed five acquisitions during fiscal 2023. A summary of the allocation of the total purchase consideration is presented as follows (in millions):

Fiscal 2023	**Purchase Consideration**	**Net Tangible Assets Acquired (Liabilities Assumed)**	**Purchased Intangible Assets**	**Goodwill**
Total acquisitions (five in total)	**$ 315**	**$ (18)**	**$ 150**	**$ 183**

The total purchase consideration related to our acquisitions completed during fiscal 2023 consisted primarily of cash consideration. The total cash and cash equivalents acquired from these acquisitions was approximately $7 million.

Fiscal 2022 Acquisitions

Allocation of the purchase consideration for acquisitions completed in fiscal 2022 is summarized as follows (in millions):

Fiscal 2022	Purchase Consideration	Net Tangible Assets Acquired (Liabilities Assumed)	Purchased Intangible Assets	Goodwill
Total acquisitions (three in total)	$ 364	$ 12	$ 20	$ 332

The total purchase consideration related to our acquisitions completed during fiscal 2022 consisted of cash consideration and vested share-based awards assumed. The total cash and cash equivalents acquired from these acquisitions was approximately $7 million.

Fiscal 2021 Acquisitions

In fiscal 2021, we completed 13 acquisitions for total purchase consideration of $7.5 billion.

(b) Other Acquisition and Divestiture Information

Total transaction costs related to acquisition and divestiture activities during fiscal 2023, 2022, and 2021 were $26 million, $50 million, and $46 million, respectively. These transaction costs were expensed as incurred in G&A expenses in the Consolidated Statements of Operations.

The goodwill generated from acquisitions completed during fiscal 2023 is primarily related to expected synergies. The goodwill is generally not deductible for income tax purposes.

The Consolidated Financial Statements include the operating results of each acquisition from the date of acquisition. Pro forma results of operations and the revenue and net income subsequent to the acquisition date for the acquisitions completed during fiscal 2023, 2022, and 2021 have not been presented because the effects of the acquisitions were not material to our financial results.

5. Goodwill and Purchased Intangible Assets

(a) Goodwill

The following tables present the goodwill allocated to our reportable segments as of July 29, 2023 and July 30, 2022, as well as the changes to goodwill during fiscal 2023 and 2022 (in millions):

	Balance at July 30, 2022	Acquisitions	Foreign Currency Translation and Other	Balance at July 29, 2023
Americas	**$ 23,882**	**$ 123**	**$ 30**	**$ 24,035**
EMEA	**9,062**	**44**	**12**	**9,118**
APJC	**5,360**	**16**	**6**	**5,382**
Total	**$ 38,304**	**$ 183**	**$ 48**	**$ 38,535**

	Balance at July 31, 2021	Acquisitions	Foreign Currency Translation and Other	Balance at July 30, 2022
Americas	$ 23,673	$ 222	$ (13)	$ 23,882
EMEA	9,094	83	(115)	9,062
APJC	5,401	27	(68)	5,360
Total	$ 38,168	$ 332	$ (196)	$ 38,304

(b) Purchased Intangible Assets

The following tables present details of our intangible assets acquired through acquisitions completed during fiscal 2023 and 2022 (in millions, except years):

	FINITE LIVES				**INDEFINITE LIVES**	
	TECHNOLOGY		**CUSTOMER RELATIONSHIPS**		**IPR&D**	**TOTAL**
Fiscal 2023	**Weighted-Average Useful Life (in Years)**	**Amount**	**Weighted-Average Useful Life (in Years)**	**Amount**	**Amount**	**Amount**
Total acquisitions (five in total)	**3.7**	**$ 138**	**1.8**	**$ 12**	**$ —**	**$ 150**

	FINITE LIVES				INDEFINITE LIVES	
	TECHNOLOGY		CUSTOMER RELATIONSHIPS		IPR&D	TOTAL
Fiscal 2022	Weighted-Average Useful Life (in Years)	Amount	Weighted-Average Useful Life (in Years)	Amount	Amount	Amount
Total acquisitions (three in total)	2.7	$ 16	2.0	$ 4	$ —	$ 20

The following tables present details of our purchased intangible assets (in millions):

July 29, 2023	**Gross**	**Accumulated Amortization**	**Net**
Purchased intangible assets with finite lives:			
Technology	**$ 2,998**	**$ (1,691)**	**$ 1,307**
Customer relationships	**1,228**	**(905)**	**323**
Other	**40**	**(22)**	**18**
Total purchased intangible assets with finite lives	**4,266**	**(2,618)**	**1,648**
In-process research and development, with indefinite lives	**170**	**—**	**170**
Total	**$ 4,436**	**$ (2,618)**	**$ 1,818**

July 30, 2022	Gross	Accumulated Amortization	Net
Purchased intangible assets with finite lives:			
Technology	$ 2,631	$ (1,102)	$ 1,529
Customer relationships	1,354	(769)	585
Other	41	(16)	25
Total purchased intangible assets with finite lives	4,026	(1,887)	2,139
In-process research and development, with indefinite lives	430	—	430
Total	$ 4,456	$ (1,887)	$ 2,569

Purchased intangible assets include intangible assets acquired through acquisitions as well as through direct purchases or licenses.

The following table presents the amortization of purchased intangible assets, including impairment charges (in millions):

Years Ended	**July 29, 2023**	July 30, 2022	July 31, 2021
Amortization of purchased intangible assets:			
Cost of sales	**$ 649**	$ 749	$ 716
Operating expenses	**282**	328	215
Total	**$ 931**	$ 1,077	$ 931

The estimated future amortization expense of purchased intangible assets with finite lives as of July 29, 2023 is as follows (in millions):

Fiscal Year	Amount
2024	$ 875
2025	$ 502
2026	$ 154
2027	$ 78
2028	$ 39

6. Restructuring and Other Charges

In the second quarter of fiscal 2023, we announced a restructuring plan (the “Fiscal 2023 Plan”), in order to rebalance the organization and enable further investment in key priority areas, of which approximately 5% of the global workforce would be impacted. The total pretax charges are estimated to be approximately $700 million. This rebalancing includes talent movement options and restructuring. Additionally, we have begun optimizing our real estate portfolio, aligned to the broader hybrid work strategy. In connection with the Fiscal 2023 Plan, we incurred charges of $ 535 million in fiscal 2023. These aggregate pretax charges will be primarily cash-based and will consist of severance and other one-time termination benefits, real estate-related charges, and other costs. We expect the plan to be substantially completed by the end of the first quarter of fiscal 2024.

We initiated a restructuring plan in fiscal 2021 (the “Fiscal 2021 Plan”), which was completed in fiscal 2022. In connection with the Fiscal 2021 Plan, we incurred cumulative charges of $892 million. The aggregate pretax charges related to this plan were primarily cash-based and consist of severance and other one-time termination benefits, and other costs.

The following table summarizes the activities related to the restructuring and other charges, as discussed above (in millions):

	FISCAL 2023 PLAN		FISCAL 2021 AND PRIOR PLANS		
	Employee Severance	Other	Employee Severance	Other	Total
Liability as of July 25, 2020	$ —	$ —	$ 58	$ 14	$ 72
Charges	—	—	836	50	886
Cash payments	—	—	(879)	(11)	(890)
Non-cash items	—	—	1	(35)	(34)
Liability as of July 31, 2021	—	—	16	18	34
Charges	—	—	9	(3)	6
Cash payments	—	—	(23)	(2)	(25)
Non-cash items	—	—	—	(6)	(6)
Liability as of July 30, 2022	**—**	**—**	**2**	**7**	**9**
Charges	**465**	**70**	**—**	**(4)**	**531**
Cash payments	**(301)**	**(11)**	**(1)**	**(1)**	**(314)**
Non-cash items	**2**	**(15)**	**—**	**—**	**(13)**
Liability as of July 29, 2023	**$ 166**	**$ 44**	**$ 1**	**$ 2**	**$ 213**

7. Balance Sheet and Other Details

The following tables provide details of selected balance sheet and other items (in millions):

Cash, Cash Equivalents, Restricted Cash and Restricted Cash Equivalents

	July 29, 2023	July 30, 2022
Cash and cash equivalents	**$ 10,123**	$ 7,079
Restricted cash and restricted cash equivalents included in other current assets	**191**	—
Restricted cash and restricted cash equivalents included in other assets	**1,313**	1,500
Total	**$ 11,627**	$ 8,579

Our restricted cash and restricted cash equivalents are funds primarily related to contractual obligations with suppliers.

Inventories

	July 29, 2023	July 30, 2022
Raw materials	**$ 1,685**	$ 1,601
Work in process	**264**	150
Finished goods	**1,493**	717
Service-related spares	**186**	90
Demonstration systems	**16**	10
Total	**$ 3,644**	$ 2,568

Property and Equipment, Net

	July 29, 2023	July 30, 2022
Gross property and equipment:		
Land, buildings, and building and leasehold improvements	**$ 4,229**	$ 4,219
Computer equipment and related software	**744**	779
Production, engineering, and other equipment	**4,611**	4,647
Operating lease assets	**135**	185
Furniture, fixtures and other	**339**	335
Total gross property and equipment	**10,058**	10,165
Less: accumulated depreciation and amortization	**(7,973)**	(8,168)
Total	**$ 2,085**	$ 1,997

Remaining Performance Obligations (RPO)

	July 29, 2023	July 30, 2022
Product	**$ 15,802**	$ 14,090
Service	**19,066**	17,449
Total	**$ 34,868**	$ 31,539
Short-term RPO	**$ 17,910**	$ 16,936
Long-term RPO	**16,958**	14,603
Total	**$ 34,868**	$ 31,539
Amount to be recognized as revenue over the next 12 months	**51 %**	54 %
Deferred revenue	**$ 25,550**	$ 23,264
Unbilled contract revenue	**9,318**	8,275
Total	**$ 34,868**	$ 31,539

Unbilled contract revenue represents noncancelable contracts for which we have not invoiced, have an obligation to perform, and revenue has not yet been recognized in the financial statements.

Deferred Revenue

	July 29, 2023	July 30, 2022
Product	**$ 11,505**	$ 10,427
Service	**14,045**	12,837
Total	**$ 25,550**	$ 23,264
Reported as:		
Current	**$ 13,908**	$ 12,784
Noncurrent	**11,642**	10,480
Total	**$ 25,550**	$ 23,264

Transition Tax Payable

Our income tax payable associated with the one-time U.S. transition tax on accumulated earnings for foreign subsidiaries as a result of the Tax Act is as follows (in millions):

	July 29, 2023	July 30, 2022
Current	**$ 1,364**	$ 727
Noncurrent	**4,092**	5,456
Total	**$ 5,456**	$ 6,183

8. Leases

(a) Lessee Arrangements

The following table presents our operating lease balances (in millions):

	Balance Sheet Line Item	July 29, 2023	July 30, 2022
Operating lease right-of-use assets	Other assets	**$ 971**	$ 1,003
Operating lease liabilities	Other current liabilities	**$ 313**	$ 322
Operating lease liabilities	Other long-term liabilities	**707**	724
Total operating lease liabilities		**$ 1,020**	$ 1,046

The components of our lease expenses were as follows (in millions):

Years Ended	July 29, 2023	July 30, 2022
Operating lease expense	**$ 425**	$ 390
Short-term lease expense	**65**	66
Variable lease expense	**242**	173
Total lease expense	**$ 732**	$ 629

Supplemental information related to our operating leases is as follows (in millions):

Years Ended	July 29, 2023	July 30, 2022
Cash paid for amounts included in the measurement of lease liabilities — operating cash flows	**$ 387**	$ 408
Right-of-use assets obtained in exchange for operating leases liabilities	**$ 326**	$ 331

The weighted-average lease term was 4.6 years and 4.7 years as of July 29, 2023 and July 30, 2022, respectively. The weighted-average discount rate was 3.1% and 2.2% as of July 29, 2023 and July 30, 2022, respectively.

The maturities of our operating leases (undiscounted) as of July 29, 2023 are as follows (in millions):

Fiscal Year	Amount
2024	$ 341
2025	259
2026	167
2027	99
2028	73
Thereafter	177
Total lease payments	1,116
Less interest	(96)
Total	$ 1,020

(b) Lessor Arrangements

Our leases primarily represent sales-type leases with terms of four years on average. We provide leasing of our equipment and complementary third-party products primarily through our channel partners and distributors, for which the income arising from these leases is recognized through interest income. Interest income for fiscal 2023 and 2022 was $51 million and $54 million, respectively, and was included in interest income in the Consolidated Statement of Operations. The net investment of our lease receivables is measured at the commencement date as the gross lease receivable, residual value less unearned income and allowance for credit loss. For additional information, see Note 9.

Future minimum lease payments on our lease receivables as of July 29, 2023 are summarized as follows (in millions):

Fiscal Year	Amount
2024	$ 371
2025	221
2026	167
2027	147
2028	100
Thereafter	9
Total	1,015
Less: Present value of lease payments	927
Unearned income	$ 88

Actual cash collections may differ from the contractual maturities due to early customer buyouts, refinancings, or defaults.

We provide financing of certain equipment through operating leases, and the amounts are included in property and equipment in the Consolidated Balance Sheets. Amounts relating to equipment on operating lease assets held by us and the associated accumulated depreciation are summarized as follows (in millions):

	July 29, 2023	July 30, 2022
Operating lease assets	**$ 135**	$ 185
Accumulated depreciation	**(78)**	(111)
Operating lease assets, net	**$ 57**	$ 74

Our operating lease income for fiscal 2023 and 2022 was $73 million and $107 million, respectively, and was included in product revenue in the Consolidated Statement of Operations.

Minimum future rentals on noncancelable operating leases as of July 29, 2023 are summarized as follows (in millions):

Fiscal Year	Amount
2024	$ 25
2025	12
2026	6
Total	$ 43

9. Financing Receivables

(a) Financing Receivables

Financing receivables primarily consist of loan receivables and lease receivables. Loan receivables represent financing arrangements related to the sale of our hardware, software, and services (including technical support and advanced services), and also may include additional funding for other costs associated with network installation and integration of our products and services. Loan receivables have terms of one year to three years on average. Lease receivables represent sales-type leases resulting from the sale of Cisco’s and complementary third-party products and are typically collateralized by a security interest in the underlying assets. Lease receivables consist of arrangements with terms of four years on average.

A summary of our financing receivables is presented as follows (in millions):

July 29, 2023	**Loan Receivables**	**Lease Receivables**	**Total**
Gross	**$ 5,910**	**$ 1,015**	**$ 6,925**
Residual value	**—**	**70**	**70**
Unearned income	**—**	**(88)**	**(88)**
Allowance for credit loss	**(53)**	**(19)**	**(72)**
Total, net	**$ 5,857**	**$ 978**	**$ 6,835**
Reported as:			
Current	**$ 2,988**	**$ 364**	**$ 3,352**
Noncurrent	**2,869**	**614**	**3,483**
Total, net	**$ 5,857**	**$ 978**	**$ 6,835**

July 30, 2022	Loan Receivables	Lease Receivables	Total
Gross	$ 6,842	$ 1,176	$ 8,018
Residual value	—	76	76
Unearned income	—	(54)	(54)
Allowance for credit loss	(103)	(23)	(126)
Total, net	$ 6,739	$ 1,175	$ 7,914
Reported as:			
Current	$ 3,327	$ 578	$ 3,905
Noncurrent	3,412	597	4,009
Total, net	$ 6,739	$ 1,175	$ 7,914

(b) Credit Quality of Financing Receivables

The tables below present our gross financing receivables, excluding residual value, less unearned income, categorized by our internal credit risk rating by period of origination (in millions):

July 29, 2023		**Fiscal Year**					
Internal Credit Risk Rating	**Prior**	**July 27, 2019**	**July 25, 2020**	**July 31, 2021**	**July 30, 2022**	**July 29, 2023**	**Total**
Loan Receivables:							
1 to 4	**$ 10**	**$ 53**	**$ 251**	**$ 791**	**$ 1,077**	**$ 1,784**	**$ 3,966**
5 to 6	**3**	**14**	**131**	**287**	**465**	**936**	**1,836**
7 and Higher	**1**	**7**	**15**	**17**	**29**	**39**	**108**
Total Loan Receivables	**$ 14**	**$ 74**	**$ 397**	**$ 1,095**	**$ 1,571**	**$ 2,759**	**$ 5,910**
Lease Receivables:							
1 to 4	**$ 2**	**$ 20**	**$ 57**	**$ 111**	**$ 84**	**$ 235**	**$ 509**
5 to 6	**2**	**13**	**44**	**58**	**87**	**191**	**395**
7 and Higher	**—**	**1**	**2**	**4**	**5**	**11**	**23**
Total Lease Receivables	**$ 4**	**$ 34**	**$ 103**	**$ 173**	**$ 176**	**$ 437**	**$ 927**
Total	**$ 18**	**$ 108**	**$ 500**	**$ 1,268**	**$ 1,747**	**$ 3,196**	**$ 6,837**

July 30, 2022		Fiscal Year					
Internal Credit Risk Rating	Prior	July 28, 2018	July 27, 2019	July 25, 2020	July 31, 2021	July 30, 2022	Total
Loan Receivables:							
1 to 4	$ 2	$ 49	$ 173	$ 536	$ 1,458	$ 2,287	$ 4,505
5 to 6	1	17	115	345	709	1,030	2,217
7 and Higher	1	1	22	45	39	12	120
Total Loan Receivables	$ 4	$ 67	$ 310	$ 926	$ 2,206	$ 3,329	$ 6,842
Lease Receivables:							
1 to 4	$ 2	$ 25	$ 74	$ 124	$ 176	$ 152	$ 553
5 to 6	1	10	67	146	165	151	540
7 and Higher	—	1	4	12	2	10	29
Total Lease Receivables	$ 3	$ 36	$ 145	$ 282	$ 343	$ 313	$ 1,122
Total	$ 7	$ 103	$ 455	$ 1,208	$ 2,549	$ 3,642	$ 7,964

The following tables present the aging analysis of gross receivables as of July 29, 2023 and July 30, 2022 (in millions):

	DAYS PAST DUE (INCLUDES BILLED AND UNBILLED)								
July 29, 2023	**31 - 60**	**61 - 90**	**91+**	**Total Past Due**	**Current**	**Total**	**120+ Still Accruing**	**Nonaccrual Financing Receivables**	**Impaired Financing Receivables**
Loan receivables	**$ 47**	**$ 20**	**$ 37**	**$ 104**	**$ 5,806**	**$ 5,910**	**$ 17**	**$ 12**	**$ 12**
Lease receivables	**16**	**4**	**23**	**43**	**884**	**927**	**6**	**3**	**3**
Total	**$ 63**	**$ 24**	**$ 60**	**$ 147**	**$ 6,690**	**$ 6,837**	**$ 23**	**$ 15**	**$ 15**

	DAYS PAST DUE (INCLUDES BILLED AND UNBILLED)								
July 30, 2022	31 - 60	61 - 90	91+	Total Past Due	Current	Total	120+ Still Accruing	Nonaccrual Financing Receivables	Impaired Financing Receivables
Loan receivables	$ 98	$ 62	$ 129	$ 289	$ 6,553	$ 6,842	$ 14	$ 60	$ 60
Lease receivables	8	6	26	40	1,082	1,122	7	11	11
Total	$ 106	$ 68	$ 155	$ 329	$ 7,635	$ 7,964	$ 21	$ 71	$ 71

Past due financing receivables are those that are 31 days or more past due according to their contractual payment terms. The data in the preceding tables is presented by contract, and the aging classification of each contract is based on the oldest outstanding receivable, and therefore past due amounts also include unbilled and current receivables within the same contract.

(c) Allowance for Credit Loss Rollforward

The allowances for credit loss and the related financing receivables are summarized as follows (in millions):

	CREDIT LOSS ALLOWANCES		
	Loan Receivables	**Lease Receivables**	**Total**
Allowance for credit loss as of July 30, 2022	**$ 103**	**$ 23**	**$ 126**
Provisions (benefits)	**(7)**	**(1)**	**(8)**
Recoveries (write-offs), net	**(38)**	**(3)**	**(41)**
Foreign exchange and other	**(5)**	**—**	**(5)**
Allowance for credit loss as of July 29, 2023	**$ 53**	**$ 19**	**$ 72**

	CREDIT LOSS ALLOWANCES		
	Loan Receivables	Lease Receivables	Total
Allowance for credit loss as of July 31, 2021	$ 89	$ 38	$ 127
Provisions (benefits)	4	(13)	(9)
Recoveries (write-offs), net	—	(2)	(2)
Foreign exchange and other	10	—	10
Allowance for credit loss as of July 30, 2022	$ 103	$ 23	$ 126

	CREDIT LOSS ALLOWANCES		
	Loan Receivables	Lease Receivables	Total
Allowance for credit loss as of July 25, 2020	$ 90	$ 48	$ 138
Provisions (benefits)	(17)	(10)	(27)
Recoveries (write-offs), net	(1)	(1)	(2)
Foreign exchange and other	17	1	18
Allowance for credit loss as of July 31, 2021	$ 89	$ 38	$ 127

10. Investments

(a) Summary of Available-for-Sale Debt Investments

The following tables summarize our available-for-sale debt investments (in millions):

July 29, 2023	Amortized Cost	Gross Unrealized Gains	Gross Unrealized and Credit Losses	Fair Value
U.S. government securities	**$ 3,587**	**$ 1**	**$ (62)**	**$ 3,526**
U.S. government agency securities	**428**	**—**	**(5)**	**423**
Non-U.S. government and agency securities	**364**	**—**	**(1)**	**363**
Corporate debt securities	**7,238**	**3**	**(327)**	**6,914**
U.S. agency mortgage-backed securities	**2,421**	**14**	**(230)**	**2,205**
Commercial paper	**1,484**	**—**	**—**	**1,484**
Certificates of deposit	**677**	**—**	**—**	**677**
Total	**$ 16,199**	**$ 18**	**$ (625)**	**$ 15,592**

July 30, 2022	Amortized Cost	Gross Unrealized Gains	Gross Unrealized and Credit Losses	Fair Value
U.S. government securities	$ 1,287	$ —	$ (49)	$ 1,238
U.S. government agency securities	142	—	(4)	138
Non-U.S. government and agency securities	272	—	—	272
Corporate debt securities	8,127	2	(311)	7,818
U.S. agency mortgage-backed securities	2,134	—	(158)	1,976
Commercial paper	255	—	—	255
Certificates of deposit	250	—	—	250
Total	$ 12,467	$ 2	$ (522)	$ 11,947

The following table presents the gross realized gains and gross realized losses related to available-for-sale debt investments (in millions):

Years Ended	**July 29, 2023**	July 30, 2022	July 31, 2021
Gross realized gains	**$ 4**	$ 27	$ 55
Gross realized losses	**(25)**	(18)	(2)
Total	**$ (21)**	$ 9	$ 53

The following tables present the breakdown of the available-for-sale debt investments with gross unrealized losses and the duration that those losses had been unrealized at July 29, 2023 and July 30, 2022 (in millions):

	UNREALIZED LOSSES LESS THAN 12 MONTHS		**UNREALIZED LOSSES 12 MONTHS OR GREATER**		**TOTAL**	
July 29, 2023	**Fair Value**	**Gross Unrealized Losses**	**Fair Value**	**Gross Unrealized Losses**	**Fair Value**	**Gross Unrealized Losses**
U.S. government securities	**$ 2,394**	**$ (26)**	**$ 931**	**$ (36)**	**$ 3,325**	**$ (62)**
U.S. government agency securities	**343**	**(2)**	**72**	**(3)**	**415**	**(5)**
Non-U.S. government and agency securities	**363**	**(1)**	**—**	**—**	**363**	**(1)**
Corporate debt securities	**1,736**	**(22)**	**4,315**	**(275)**	**6,051**	**(297)**
U.S. agency mortgage-backed securities	**658**	**(13)**	**1,438**	**(217)**	**2,096**	**(230)**
Commercial paper	**97**	**—**	**—**	**—**	**97**	**—**
Certificates of deposit	**2**	**—**	**—**	**—**	**2**	**—**
Total	**$ 5,593**	**$ (64)**	**$ 6,756**	**$ (531)**	**$ 12,349**	**$ (595)**

	UNREALIZED LOSSES LESS THAN 12 MONTHS		UNREALIZED LOSSES 12 MONTHS OR GREATER		TOTAL	
July 30, 2022	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
U.S. government securities	$ 1,110	$ (44)	$ 120	$ (5)	$ 1,230	$ (49)
U.S. government agency securities	114	(2)	24	(2)	138	(4)
Non-U.S. government and agency securities	264	—	—	—	264	—
Corporate debt securities	6,920	(240)	422	(37)	7,342	(277)
U.S. agency mortgage-backed securities	1,305	(96)	615	(62)	1,920	(158)
Total	$ 9,713	$ (382)	$ 1,181	$ (106)	$ 10,894	$ (488)

The following table summarizes the maturities of our available-for-sale debt investments as of July 29, 2023 (in millions):

	Amortized Cost	Fair Value
Within 1 year	$ 5,510	$ 5,462
After 1 year through 5 years	8,197	7,856
After 5 years through 10 years	69	67
After 10 years	2	2
Mortgage-backed securities with no single maturity	2,421	2,205
Total	$ 16,199	$ 15,592

Actual maturities may differ from the contractual maturities because borrowers may have the right to call or prepay certain obligations.

(b) Summary of Equity Investments

We held marketable equity securities of $431 million and $241 million as of July 29, 2023 and July 30, 2022, respectively. We recognized a net unrealized gain of $36 million during fiscal 2023 and a net unrealized loss of $38 million during fiscal 2022 on our marketable securities still held as of the reporting date. Our net adjustments to non-marketable equity securities measured using the measurement alternative still held was a net loss of $8 million and a net gain of $32 million for fiscal 2023 and 2022, respectively. We held equity interests in certain private equity funds of $0.9 billion and $1.1 billion as of July 29, 2023 and July 30, 2022, respectively, which are accounted for under the NAV practical expedient.

In the ordinary course of business, we have investments in privately held companies and provide financing to certain customers. These privately held companies and customers are evaluated for consolidation under the variable interest or voting interest entity models. We evaluate on an ongoing basis our investments in these privately held companies and our customer financings, and have determined that as of July 29, 2023, there were no additional significant variable interest or voting interest entities required to be consolidated in our Consolidated Financial Statements.

As of July 29, 2023, the carrying value of our investments in privately held companies was $1.8 billion. Of the total carrying value of our investments in privately held companies as of July 29, 2023, $1.0 billion of such investments are considered to be in variable interest entities which are unconsolidated. We have total funding commitments of $0.3 billion related to privately held investments, some of which may be based on the achievement of certain agreed-upon milestones or are required to be funded on demand. The carrying value of these investments and the additional funding commitments, collectively, represent our maximum exposure related to privately held investments.

11. Fair Value

(a) Assets and Liabilities Measured at Fair Value on a Recurring Basis

Assets and liabilities measured at fair value on a recurring basis were as follows (in millions):

	JULY 29, 2023 FAIR VALUE MEASUREMENTS			JULY 30, 2022 FAIR VALUE MEASUREMENTS		
	Level 1	**Level 2**	**Total Balance**	Level 1	Level 2	Total Balance
Assets:						
Cash equivalents:						
Money market funds	**$ 6,496**	**$ —**	**$ 6,496**	$ 3,930	$ —	$ 3,930
Commercial paper	**—**	**1,090**	**1,090**	—	72	72
Certificates of deposit	**—**	**47**	**47**	—	32	32
Corporate debt securities	**—**	**25**	**25**	—	1	1
U.S. government securities	**—**	**—**	**—**	—	12	12
Available-for-sale debt investments:						
U.S. government securities	**—**	**3,526**	**3,526**	—	1,238	1,238
U.S. government agency securities	**—**	**423**	**423**	—	138	138
Non-U.S. government and agency securities	**—**	**363**	**363**	—	272	272
Corporate debt securities	**—**	**6,914**	**6,914**	—	7,818	7,818
U.S. agency mortgage-backed securities	**—**	**2,205**	**2,205**	—	1,976	1,976
Commercial paper	**—**	**1,484**	**1,484**	—	255	255
Certificates of deposit	**—**	**677**	**677**	—	250	250
Equity investments:						
Marketable equity securities	**431**	**—**	**431**	241	—	241
Other current assets:						
Money market funds	**188**	**—**	**188**	—	—	—
Other assets:						
Money market funds	**1,313**	**—**	**1,313**	1,500	—	1,500
Derivative assets	**—**	**32**	**32**	—	78	78
Total	**$ 8,428**	**$ 16,786**	**$ 25,214**	$ 5,671	$ 12,142	$ 17,813
Liabilities:						
Derivative liabilities	**$ —**	**$ 75**	**$ 75**	$ —	$ 89	$ 89
Total	**$ —**	**$ 75**	**$ 75**	$ —	$ 89	$ 89

(b) Assets Measured at Fair Value on a Nonrecurring Basis

Our non-marketable equity securities using the measurement alternative are adjusted to fair value on a non-recurring basis. Adjustments are made when observable transactions for identical or similar investments of the same issuer occur, or due to impairment. These securities are classified as Level 3 in the fair value hierarchy because we estimate the value based on valuation methods using the observable transaction price at the transaction date and other unobservable inputs such as volatility, rights, and obligations of the securities we hold.

(c) Other Fair Value Disclosures

The fair value of our short-term loan receivables approximates their carrying value due to their short duration. The aggregate carrying value of our long-term loan receivables as of July 29, 2023 and July 30, 2022 was $2.9 billion and $3.4 billion, respectively. The estimated fair value of our long-term loan receivables approximates their carrying value. We use unobservable inputs in determining discounted cash flows to estimate the fair value of our long-term loan receivables, and therefore they are categorized as Level 3.

As of July 29, 2023 and July 30, 2022, the estimated fair value of our short-term debt approximates its carrying value due to the short maturities. As of July 29, 2023, the fair value of our senior notes was $8.7 billion, with a carrying amount of $8.4 billion. This compares to a fair value of $9.7 billion and a carrying amount of $8.9 billion as of July 30, 2022. The fair value of the senior notes was determined based on observable market prices in a less active market and was categorized as Level 2.

12. Borrowings

(a) Short-Term Debt

The following table summarizes our short-term debt (in millions, except percentages):

	July 29, 2023		July 30, 2022	
	Amount	**Effective Rate**	Amount	Effective Rate
Current portion of long-term debt	**$ 1,733**	**4.45 %**	$ 499	2.68 %
Commercial paper	**—**	**—**	600	2.05 %
Total	**$ 1,733**		$ 1,099	

We have a short-term debt financing program of up to $10.0 billion through the issuance of commercial paper notes. We use the proceeds from the issuance of commercial paper notes for general corporate purposes.

The effective rates for the short- and long-term debt include the interest on the notes, the accretion of the discount, the issuance costs, and, if applicable, adjustments related to hedging.

(b) Long-Term Debt

The following table summarizes our long-term debt (in millions, except percentages):

		July 29, 2023		July 30, 2022	
	Maturity Date	**Amount**	**Effective Rate**	Amount	Effective Rate
Senior notes:					
Fixed-rate notes:					
2.60%	February 28, 2023	**$ —**	**—**	$ 500	2.68%
2.20%	September 20, 2023	**750**	**2.27%**	750	2.27%
3.625%	March 4, 2024	**1,000**	**6.08%**	1,000	2.69%
3.50%	June 15, 2025	**500**	**6.38%**	500	3.20%
2.95%	February 28, 2026	**750**	**3.01%**	750	3.01%
2.50%	September 20, 2026	**1,500**	**2.55%**	1,500	2.55%
5.90%	February 15, 2039	**2,000**	**6.11%**	2,000	6.11%
5.50%	January 15, 2040	**2,000**	**5.67%**	2,000	5.67%
Total		**8,500**		9,000	
Unaccreted discount/issuance costs		**(68)**		(75)	
Hedge accounting fair value adjustments		**(41)**		(10)	
Total		**$ 8,391**		$ 8,915	
Reported as:					
Short-term debt		**$ 1,733**		$ 499	
Long-term debt		**6,658**		8,416	
Total		**$ 8,391**		$ 8,915	

We have entered into interest rate swaps in prior periods with an aggregate notional amount of $1.5 billion designated as fair value hedges of certain of our fixed-rate senior notes. These swaps convert the fixed interest rates of the fixed-rate notes to floating interest rates based on SOFR. The gains and losses related to changes in the fair value of the interest rate swaps substantially offset changes in the fair value of the hedged portion of the underlying debt that are attributable to the changes in market interest rates. For additional information, see Note 13.

Interest is payable semiannually on each class of the senior fixed-rate notes. Each of the senior fixed-rate notes is redeemable by us at any time, subject to a make-whole premium. The senior notes rank at par with the commercial paper notes that may be issued in the future pursuant to our short-term debt financing program, as discussed above under “(a) Short-Term Debt.” As of July 29, 2023, we were in compliance with all debt covenants.

As of July 29, 2023, future principal payments for long-term debt, including the current portion, are summarized as follows (in millions):

Fiscal Year	Amount
2024	$ 1,750
2025	500
2026	750
2027	1,500
Thereafter	4,000
Total	$ 8,500

(c) Credit Facility

On May 13, 2021, we entered into a 5-year credit agreement with certain institutional lenders that provides for a $3.0 billion unsecured revolving credit facility that is scheduled to expire on May 13, 2026. As of July 29, 2023, we were in compliance with the required interest coverage ratio and the other covenants, and we had not borrowed any funds under the credit agreement. On April 18, 2023, we entered into an amendment to the credit agreement to replace the LIBOR index with Term SOFR.

Any advances under the 5-year credit agreement will accrue interest at rates that are equal to, based on certain conditions, either (a) with respect to loans in U.S. dollars, (i) Term SOFR (plus a 0.10% credit spread adjustment) or (ii) the Base Rate (to be defined as the highest of (x) the Bank of America prime rate, (y) the Federal Funds rate plus 0.50% and (z) Term SOFR plus 1.0%), (b) with respect to loans in Euros, EURIBOR, (c) with respect to loans in Yen, TIBOR and (d) with respect to loans in Pounds Sterling, SONIA, plus a margin that is based on our senior debt credit ratings as published by Standard & Poor’s Financial Services, LLC and Moody’s Investors Service, Inc., provided that in no event will the interest rate be less than 0.0%. We will pay a quarterly commitment fee during the term of the 5-year credit agreement which may vary depending on our senior debt credit ratings. In addition, the 5-year credit agreement incorporates certain sustainability-linked metrics. Specifically, our applicable interest rate and commitment fee are subject to upward or downward adjustments if we achieve, or fail to achieve, certain specified targets based on two key performance indicator metrics: (i) social impact and (ii) foam reduction. We may also, upon the agreement of either the then-existing lenders or additional lenders not currently parties to the agreement, increase the commitments under the credit facility by up to an additional $2.0 billion and, at our option, extend the maturity of the facility for an additional year up to two times. The credit agreement requires that we comply with certain covenants, including that we maintain an interest coverage ratio as defined in the agreement.

13. Derivative Instruments

(a) Summary of Derivative Instruments

We use derivative instruments primarily to manage exposures to foreign currency exchange rate, interest rate, and equity price risks. Our primary objective in holding derivatives is to reduce the volatility of earnings and cash flows associated with changes in foreign currency exchange rates, interest rates, and equity prices. Our derivatives expose us to credit risk to the extent that the counterparties may be unable to meet the terms of the agreement. We do, however, seek to mitigate such risks by limiting our counterparties to major financial institutions and requiring collateral in certain cases. In addition, the potential risk of loss with any one counterparty resulting from this type of credit risk is monitored. Management does not expect material losses as a result of defaults by counterparties.

The fair values of our derivative instruments and the line items on the Consolidated Balance Sheets to which they were recorded are summarized as follows (in millions):

	DERIVATIVE ASSETS			DERIVATIVE LIABILITIES		
	Balance Sheet Line Item	**July 29, 2023**	July 30, 2022	Balance Sheet Line Item	**July 29, 2023**	July 30, 2022
Derivatives designated as hedging instruments:						
Foreign currency derivatives	Other current assets	**$ 22**	$ 55	Other current liabilities	**$ —**	$ —
Foreign currency derivatives	Other assets	**9**	9	Other long-term liabilities	**—**	—
Interest rate derivatives	Other current assets	**—**	—	Other current liabilities	**17**	—
Interest rate derivatives	Other assets	**—**	—	Other long-term liabilities	**24**	10
Total		**31**	64		**41**	10
Derivatives not designated as hedging instruments:						
Foreign currency derivatives	Other current assets	**1**	14	Other current liabilities	**25**	69
Foreign currency derivatives	Other assets	**—**	—	Other long-term liabilities	**9**	9
Equity derivatives	Other current assets	**—**	—	Other current liabilities	**—**	1
Total		**1**	14		**34**	79
Total		**$ 32**	$ 78		**$ 75**	$ 89

The following amounts were recorded on the Consolidated Balance Sheets related to cumulative basis adjustments for our fair value hedges (in millions):

	CARRYING AMOUNT OF THE HEDGED ASSETS/(LIABILITIES)		CUMULATIVE AMOUNT OF FAIR VALUE HEDGING ADJUSTMENT INCLUDED IN THE CARRYING AMOUNT OF THE HEDGED ASSETS/LIABILITIES	
Balance Sheet Line Item of Hedged Item	**July 29, 2023**	July 30, 2022	**July 29, 2023**	July 30, 2022
Short-term debt	**$ (983)**	$ —	**$ 17**	$ —
Long-term debt	**$ (476)**	$ (1,487)	**$ 24**	$ 10

The effect of derivative instruments designated as fair value hedges, recognized in interest and other income (loss), net is summarized as follows (in millions):

	GAINS (LOSSES) FOR THE YEARS ENDED		
	July 29, 2023	July 30, 2022	July 31, 2021
Interest rate derivatives:			
Hedged items	**$ 31**	$ 116	$ 65
Derivatives designated as hedging instruments	**(31)**	(118)	(67)
Total	**$ —**	$ (2)	$ (2)

The effect on the Consolidated Statements of Operations of derivative instruments not designated as hedges is summarized as follows (in millions):

		GAINS (LOSSES) FOR THE YEARS ENDED		
Derivatives Not Designated as Hedging Instruments	Line Item in Statements of Operations	**July 29, 2023**	July 30, 2022	July 31, 2021
Foreign currency derivatives	Other income (loss), net	**$ 1**	$ (237)	$ 2
Total return swaps—deferred compensation	Operating expenses and other	**58**	(92)	157
Equity derivatives	Other income (loss), net	**13**	9	20
Total		**$ 72**	$ (320)	$ 179

The notional amounts of our outstanding derivatives are summarized as follows (in millions):

	July 29, 2023	July 30, 2022
Foreign currency derivatives	**$ 5,419**	$ 4,521
Interest rate derivatives	**1,500**	1,500
Total return swaps—deferred compensation	**792**	651
Total	**$ 7,711**	$ 6,672

(b) Offsetting of Derivative Instruments

We present our derivative instruments at gross fair values in the Consolidated Balance Sheets. However, our master netting and other similar arrangements with the respective counterparties allow for net settlement under certain conditions, which are designed to reduce credit risk by permitting net settlement with the same counterparty.

To further limit credit risk, we also enter into collateral security arrangements related to certain derivative instruments whereby cash is posted as collateral between the counterparties based on the fair market value of the derivative instrument. Under these collateral security arrangements, the net cash collateral provided for was $40 million and $14 million as of July 29, 2023 and July 30, 2022, respectively.

(c) Foreign Currency Exchange Risk

We conduct business globally in numerous currencies. Therefore, we are exposed to adverse movements in foreign currency exchange rates. To limit the exposure related to foreign currency changes, we enter into foreign currency contracts. We do not enter into such contracts for speculative purposes.

We hedge forecasted foreign currency transactions related to certain revenues, operating expenses and service cost of sales with currency options and forward contracts. These currency options and forward contracts, designated as cash flow hedges, generally have maturities of less than 24 months. The derivative instrument's gain or loss is initially reported as a component of accumulated other comprehensive income (AOCI) and subsequently reclassified into earnings when the hedged exposure affects earnings.

We enter into foreign exchange forward and option contracts to reduce the short-term effects of foreign currency fluctuations on assets and liabilities such as foreign currency receivables, long-term customer financings and payables. These derivatives are not designated as hedging instruments. Gains and losses on the contracts are included in other income (loss), net, and substantially offset foreign exchange gains and losses from the remeasurement of intercompany balances, other current assets, or liabilities denominated in currencies other than the functional currency of the reporting entity.

We hedge certain net investments in our foreign operations with forward contracts to reduce the effects of foreign currency fluctuations on our net investment in those foreign subsidiaries. These derivative instruments generally have maturities of up to six months.

(d) Interest Rate Risk

We hold interest rate swaps designated as fair value hedges related to fixed-rate senior notes that are due in fiscal 2024 through 2025. Under these interest rate swaps, we receive fixed-rate interest payments and make interest payments based on SOFR plus a fixed number of basis points. The effect of such swaps is to convert the fixed interest rates of the senior fixed-rate notes to floating interest rates based on SOFR. The gains and losses related to changes in the fair value of the interest rate swaps are included in interest expense and substantially offset changes in the fair value of the hedged portion of the underlying debt that are attributable to the changes in market interest rates.

(e) Equity Price Risk

We hold marketable equity securities in our portfolio that are subject to price risk. To diversify our overall portfolio, we also hold equity derivatives that are not designated as accounting hedges. The change in the fair value of each of these investment types are included in other income (loss), net.

We are also exposed to variability in compensation charges related to certain deferred compensation obligations to employees. Although not designated as accounting hedges, we utilize derivatives such as total return swaps to economically hedge this exposure and offset the related compensation expense.

14. Commitments and Contingencies

(a) Purchase Commitments with Contract Manufacturers and Suppliers

We purchase components from a variety of suppliers and use several contract manufacturers to provide manufacturing services for our products. During the normal course of business, in order to manage manufacturing lead times and help ensure adequate component supply, we enter into agreements with contract manufacturers and suppliers that allow them to procure inventory based upon criteria as defined by us or establish the parameters defining our requirements. A significant portion of our reported purchase commitments arising from these agreements consists of firm, noncancelable, and unconditional commitments. Certain of these inventory purchase commitments with contract manufacturers and suppliers relate to arrangements to secure supply and pricing for certain product components for multi-year periods. In certain instances, these agreements allow us the option to cancel, reschedule, and adjust our requirements based on our business needs prior to firm orders being placed.

The following table summarizes our inventory purchase commitments with contract manufacturers and suppliers (in millions):

Commitments by Period	**July 29, 2023**	July 30, 2022
Less than 1 year	**$ 5,270**	$ 9,954
1 to 3 years	**1,783**	2,240
3 to 5 years	**200**	770
Total	**$ 7,253**	$ 12,964

We record a liability for firm, noncancelable, and unconditional purchase commitments for quantities in excess of our future demand forecasts consistent with the valuation of our excess and obsolete inventory. As of July 29, 2023 and July 30, 2022, the liability for these purchase commitments was $529 million and $313 million, respectively, and was included in other current liabilities.

(b) Other Commitments

In connection with our acquisitions, we have agreed to pay certain additional amounts contingent upon the achievement of certain agreed-upon technology, development, product, or other milestones or upon the continued employment with Cisco of certain employees of the acquired entities.

The following table summarizes the compensation expense related to acquisitions (in millions):

	July 29, 2023	July 30, 2022	July 31, 2021
Compensation expense related to acquisitions	**$ 222**	$ 271	$ 262

As of July 29, 2023, we estimated that future cash compensation expense of up to $349 million may be required to be recognized pursuant to the applicable business combination agreements.

We also have certain funding commitments, primarily related to our privately held investments, some of which are based on the achievement of certain agreed-upon milestones or are required to be funded on demand. The funding commitments were $0.3 billion and $0.4 billion as of July 29, 2023 and July 30, 2022, respectively.

(c) Product Warranties

The following table summarizes the activity related to the product warranty liability (in millions):

	July 29, 2023	July 30, 2022	July 31, 2021
Balance at beginning of fiscal year	**$ 333**	$ 336	$ 331
Provisions for warranties issued	**386**	415	496
Adjustments for pre-existing warranties	**18**	3	—
Settlements	**(408)**	(421)	(491)
Balance at end of fiscal year	**$ 329**	$ 333	$ 336

We accrue for warranty costs as part of our cost of sales based on associated material product costs, labor costs for technical support staff, and associated overhead. Our products are generally covered by a warranty for periods ranging from 90 days to five years, and for some products we provide a limited lifetime warranty.

(d) Financing and Other Guarantees

In the ordinary course of business, we provide financing guarantees for various third-party financing arrangements extended to channel partners customers. Payments under these financing guarantee arrangements were not material for the periods presented.

Channel Partner Financing Guarantees We facilitate arrangements for third-party financing extended to channel partners, consisting of revolving short-term financing, with payment terms generally ranging from 60 to 90 days. These financing arrangements facilitate the working capital requirements of the channel partners, and, in some cases, we guarantee a portion of these arrangements. The volume of channel partner financing was $32.1 billion, $27.9 billion, and $26.7 billion in fiscal 2023, 2022, and 2021, respectively. The balance of the channel partner financing subject to guarantees was $1.7 billion and $1.4 billion as of July 29, 2023 and July 30, 2022, respectively.

Financing Guarantee Summary The aggregate amounts of channel partner financing guarantees outstanding at July 29, 2023 and July 30, 2022, representing the total maximum potential future payments under financing arrangements with third parties along with the related deferred revenue, are summarized in the following table (in millions):

	July 29, 2023	July 30, 2022
Maximum potential future payments	**$ 159**	$ 188
Deferred revenue	**(34)**	(9)
Total	**$ 125**	$ 179

(e) Indemnifications

In the normal course of business, we have indemnification obligations to other parties, including customers, lessors, and parties to other transactions with us, with respect to certain matters. We have agreed to indemnify against losses arising from a breach of representations or covenants or out of intellectual property infringement or other claims made against certain parties. These agreements may limit the time or circumstances within which an indemnification claim can be made and the amount of the claim.

It is not possible to determine the maximum potential amount for claims made under the indemnification obligations due to uncertainties in the litigation process, coordination with and contributions by other parties and the defendants in these types of cases, and the unique facts and circumstances involved in each particular case and agreement. Historically, indemnity payments made by us have not had a material effect on our Consolidated Financial Statements.

In addition, we have entered into indemnification agreements with our officers and directors, and our Amended and Restated Bylaws contain similar indemnification obligations to our agents.

(f) Legal Proceedings

Brazil Brazilian authorities have investigated our Brazilian subsidiary and certain of its former employees, as well as a Brazilian importer of our products, and its affiliates and employees, relating to alleged evasion of import taxes and alleged improper transactions involving the subsidiary and the importer. Brazilian tax authorities have assessed claims against our Brazilian subsidiary based on a theory of joint liability with the Brazilian importer for import taxes, interest, and penalties. In addition to claims asserted by the Brazilian federal tax authorities in prior fiscal years, tax authorities from the Brazilian state of Sao Paulo have asserted similar claims on the same legal basis in prior fiscal years.

The asserted claims by Brazilian federal tax authorities are for calendar years 2003 through 2007, and the asserted claims by the tax authorities from the state of Sao Paulo are for calendar years 2005 through 2007. The total asserted claims by Brazilian state and federal tax authorities aggregate to $171 million for the alleged evasion of import and other taxes, $974 million for interest, and $423 million for various penalties, all determined using an exchange rate as of July 29, 2023.

We have completed a thorough review of the matters and believe the asserted claims against our Brazilian subsidiary are without merit, and we are defending the claims vigorously. While we believe there is no legal basis for the alleged liability, due to the complexities and uncertainty surrounding the judicial process in Brazil and the nature of the claims asserting joint liability with the importer, we are unable to determine the likelihood of an unfavorable outcome against our Brazilian subsidiary and are unable to reasonably estimate a range of loss, if any. We do not expect a final judicial determination for several years.

Centripetal On February 13, 2018, Centripetal Networks, Inc. (“Centripetal”) asserted patent infringement claims against us in the U.S. District Court for the Eastern District of Virginia, alleging that several of our products and services infringe eleven Centripetal U.S. patents. The district court case went to trial on five asserted patents. Subsequently, on October 5, 2020, the district court issued a judgment finding validity and willful infringement of four of the asserted patents and non-infringement of the fifth patent and awarded $1.9 billion in damages and $14 million in pre-judgment interest, declined to issue an injunction but, instead, awarded Centripetal a royalty against future revenue for an initial three-year term at a10% rate, with a minimum and maximum annual royalty of $168 million and $300 million, respectively, and for a second three-year term at a 5% rate, with a minimum and maximum annual royalty of $84 million and $150 million, respectively. We appealed and, on June 23, 2022, the U.S. Court of Appeals for the Federal Circuit ("Federal Circuit") vacated the district court's final judgment, remanded the case back to the district court to be assigned to a new judge and ordered the district court to conduct additional proceedings. The district court held a hearing on these additional proceedings over three days beginning on June 22, 2023, and a decision is pending. Prior to the hearing, on May 24, 2023, the Patent Trial and Appeal Board cancelled all claims of one of the Centripetal patents that was the subject of the hearing. On August 9, 2022, Centripetal filed a petition for writ of certiorari in the U.S. Supreme Court challenging the Federal Circuit's decision. The Supreme Court denied Centripetal's petition on December 5, 2022.

Between April 2020 and February 2022, Centripetal filed complaints in the District Court of Dusseldorf in Germany ("German Court"), asserting a total of five patents and one utility model. Centripetal sought damages and injunctive relief in all cases. On December 10, 2021, the German Court rejected Centripetal's complaints on two patents, and Centripetal has appealed. A hearing for a Cisco nullity action in the Federal Patent Court in Germany on one of those two patents occurred on August 1, 2022, and we are waiting for the Court's opinion. On December 21, 2021, the German Court stayed its decision on infringement of the third patent pending a decision by the Federal Patent Court in a related nullity proceeding. On May 17, 2022, Centripetal withdrew its complaint for infringement of the German utility model. The German Court conducted a hearing on the remaining two Centripetal complaints on November 22, 2022. The German Court found no infringement on one patent and stayed the decision in the final case pending a decision by the European Patent Office in a related opposition proceeding.

On July 10, 2023, Centripetal filed a complaint in the Paris Judiciary Court asserting the French counterpart of a European Patent. Centripetal seeks damages and injunctive relief in the case. Centripetal previously asserted the German counterpart of the same European Patent in Germany and the German Court rejected Centripetal's complaint finding no infringement.

Due to uncertainty surrounding patent litigation processes in the U.S. and Europe, we are unable to reasonably estimate the ultimate outcome of the litigations at this time. If we do not prevail in either litigation, we believe that any damages ultimately assessed would not have a material effect on our Consolidated Financial Statements.

Ramot On June 12, 2019, Ramot at Tel Aviv University Ltd. ("Ramot") asserted patent infringement claims against us in the U.S. District Court for the Eastern District of Texas ("E.D. Tex."), seeking damages, including enhanced damages, and a royalty on future sales. Ramot alleges that certain Cisco optical transceiver modules and line cards infringe three patents. We challenged the validity of all three patents in the U.S. Patent and Trademark Office ("PTO") by way of ex parte reexamination proceedings and the pending District Court case has been stayed. On July 10, 2023, the PTO issued a reexamination certificate finding all amended claims patentable with respect to one asserted patent and reexamination proceedings for the other two asserted patents are still pending.

On February 26, 2021, Ramot asserted patent infringement claims against Acacia Communications, Inc. ("Acacia") in the District of Delaware ("D. Del."), seeking damages, including enhanced damages, and a royalty on future sales. Ramot alleges that certain Acacia optical transceiver modules and integrated circuits infringe two of the three patents that Ramot asserted in the E.D. Tex. case and this case is also stayed pending the reexamination proceedings referenced above.

On September 28, 2021 and May 24, 2022, Cisco and Acacia filed two declaratory judgment actions of noninfringement against Ramot in D. Del on other Ramot patents in the same family as those involved in the pending cases above. Ramot is asserting counterclaims for infringement of the same patents and seeks damages, including enhanced damages, and a royalty on future sales. While we believe that we have strong non-infringement and invalidity arguments in these litigations, and that Ramot's damages theories in such cases are not supported by prevailing law, we are unable to reasonably estimate the ultimate outcome of these litigations at this time due to uncertainties in the litigation processes. If we do not prevail in court in these litigations, we believe any damages ultimately assessed would not have a material effect on our Consolidated Financial Statements.

Viasat On November 6, 2019, Viasat, Inc. ("Viasat") filed suit against Acacia in the California Superior Court for San Diego County ("SDSC"), alleging contract and trade secret claims for certain Acacia products sold from January 1, 2019 forward ("Viasat 2019"). In May 2023, a judgment was entered against Cisco in Viasat 2019 for an amount that did not have a material effect on our Consolidated Financial Statements. Acacia has filed an appeal with the California Court of Appeal and no hearing date has been set.

On June 9, 2020, Viasat filed another suit in SDSC alleging contract and trade secret claims for sales of additional Acacia products ("Viasat 2020"). In October 2022, an amended complaint was filed in Viasat 2020 asserting the same claims but alleging additional information. A trial date has been set for January 26, 2024. We are unable to reasonably estimate the ultimate outcome of Viasat 2020 at this time due to uncertainties in the litigation processes. If we do not prevail, we believe that any relief ultimately assessed in Viasat 2020 will not have a material effect on our Consolidated Financial Statements.

Egenera On August 8, 2016, Egenera, Inc. (“Egenera”) asserted infringement claims against us in the U.S. District Court for the District of Massachusetts, alleging that Cisco’s Unified Computing System Manager infringes three patents. Egenera sought damages, including enhanced damages, and an injunction. Two of the asserted patents were dismissed, leaving Egenera’s infringement claim based on one asserted patent. On March 25, 2022, the PTO preliminarily found all of the asserted claims of the remaining patent unpatentable in ex parte reexamination proceedings. On August 15, 2022, after a jury trial for the remaining patent, the jury returned a verdict in favor of Cisco. The District Court denied Egenera’s post-trial motions, and Egenera filed an appeal to the Federal Circuit on January 13, 2023 and those proceedings are ongoing.

In addition to the above matters, we are subject to other legal proceedings, claims, and litigation arising in the ordinary course of business, including intellectual property litigation. While the outcome of these matters is currently not determinable, we do not believe that the ultimate costs to resolve these matters will have a material effect on our Consolidated Financial Statements.

For additional information regarding intellectual property litigation, see “Part I, Item 1A. Risk Factors—We may be found to infringe on intellectual property rights of others” herein.

15. Stockholders’ Equity

(a) Stock Repurchase Program

In September 2001, our Board of Directors authorized a stock repurchase program. As of July 29, 2023, the remaining authorized amount for stock repurchases under this program was approximately $10.9 billion with no termination date.

A summary of the stock repurchase activity under the stock repurchase program, reported based on the trade date, is summarized as follows (in millions, except per-share amounts):

Years Ended	Shares	Weighted-Average Price per Share	Amount
July 29, 2023	**88**	**$ 48.49**	**$ 4,271**
July 30, 2022	146	$ 52.82	$ 7,734
July 31, 2021	64	$ 45.48	$ 2,902

There were $48 million, $70 million and $25 million in stock repurchases that were pending settlement as of July 29, 2023, July 30, 2022 and July 31, 2021, respectively.

The purchase price for the shares of our stock repurchased is reflected as a reduction to stockholders’ equity.

We are required to allocate the purchase price of the repurchased shares as (i) a reduction to retained earnings or an increase to accumulated deficit and (ii) a reduction of common stock and additional paid-in capital.

(b) Dividends Declared

On August 16, 2023, our Board of Directors declared a quarterly dividend of $0.39 per common share to be paid on October 25, 2023, to all stockholders of record as of the close of business on October 4, 2023. Future dividends will be subject to the approval of our Board of Directors.

(c) Preferred Stock

Under the terms of our Amended and Restated Certificate of Incorporation, the Board of Directors is authorized to issue preferred stock in one or more series and, in connection with the creation of such series, to fix by resolution the designation, powers (including voting powers (if any)), preferences and relative, participating, optional or other special rights, if any, of such series, and any qualifications, limitations or restrictions thereof, of the shares of such series. As of July 29, 2023, we had not issued any shares of preferred stock.

16. Employee Benefit Plans

(a) Employee Stock Incentive Plans

We have one stock incentive plan: the 2005 Stock Incentive Plan (the "2005 Plan"). In addition, we have, in connection with our acquisitions of various companies, assumed the share-based awards granted under stock incentive plans of the acquired companies or issued share-based awards in replacement thereof. Share-based awards are designed to reward employees for their long-term contributions to us and provide incentives for them to remain with us. The number and frequency of share-based awards are based on competitive practices, our operating results, government regulations, and other factors. Our primary stock incentive plan is summarized as follows:

The 2005 Plan provides for the granting of stock options, stock grants, stock units and stock appreciation rights (SARs), the vesting of which may be time-based or upon satisfaction of performance goals, or both, and/or other conditions. Employees (including employee directors and executive officers) and consultants of Cisco and its subsidiaries and affiliates and non-employee directors of Cisco are eligible to participate in the 2005 Plan. The 2005 Plan may be terminated by our Board of Directors at any time and for any reason, and is currently set to terminate at the 2030 Annual Meeting unless re-adopted or extended by our stockholders prior to or on such date.

Under the 2005 Plan's share reserve feature, a distinction is made between the number of shares in the reserve attributable to (i) stock options and SARs and (ii) "full value" awards (i.e., stock grants and stock units). Shares issued as stock grants, pursuant to stock units or pursuant to the settlement of dividend equivalents are counted against shares available for issuance under the 2005 Plan on a 1.5-to-1 ratio. For each share awarded as restricted stock or a restricted stock unit award under the 2005 Plan,1.5 shares was deducted from the available share-based award balance. If awards issued under the 2005 Plan are forfeited or terminated for any reason before being exercised or settled, then the shares underlying such awards, plus the number of additional shares, if any, that counted against shares available for issuance under the 2005 Plan at the time of grant as a result of the application of the share ratio described above, will become available again for issuance under the 2005 Plan. As of July 29, 2023, 124 million shares were authorized for future grant under the 2005 Plan.

(b) Employee Stock Purchase Plan

We have an Employee Stock Purchase Plan under which eligible employees are offered shares through a 24-month offering period, which consists of four consecutive 6-month purchase periods. Employees may purchase a limited amount of shares of our stock at a discount of up to 15% of the lesser of the fair market value at the beginning of the offering period or the end of each6-month purchase period. The Employee Stock Purchase Plan is scheduled to terminate on the earlier of (i) January 3, 2030 and (ii) the date on which all shares available for issuance under the Employee Stock Purchase Plan are sold pursuant to exercised purchase rights. We issued 19 million, 18 million, and 17 million shares under the Employee Stock Purchase Plan in fiscal 2023, 2022, and 2021, respectively. As of July 29, 2023, 88 million shares were available for issuance under the Employee Stock Purchase Plan.

(c) Summary of Share-Based Compensation Expense

Share-based compensation expense consists primarily of expenses for RSUs, stock purchase rights, and stock options, granted to employees or assumed from acquisitions. The following table summarizes share-based compensation expense (in millions):

Years Ended	**July 29, 2023**	July 30, 2022	July 31, 2021
Cost of sales—product	**$ 151**	$ 112	$ 99
Cost of sales—service	**245**	199	176
Share-based compensation expense in cost of sales	**396**	311	275
Research and development	**1,008**	790	694
Sales and marketing	**673**	572	540
General and administrative	**270**	212	226
Restructuring and other charges	**6**	1	26
Share-based compensation expense in operating expenses	**1,957**	1,575	1,486
Total share-based compensation expense	**$ 2,353**	$ 1,886	$ 1,761
Income tax benefit for share-based compensation	**$ 449**	$ 457	$ 387

As of July 29, 2023, the total compensation cost related to unvested share-based awards not yet recognized was $4.7 billion, which is expected to be recognized over approximately 2.2 years on a weighted-average basis.

(d) Restricted Stock Unit Awards

A summary of the restricted stock and stock unit activity, which includes time-based and performance-based or market-based RSUs, is as follows (in millions, except per-share amounts):

	Restricted Stock/ Stock Units	Weighted-Average Grant Date Fair Value per Share	Aggregate Fair Value
UNVESTED BALANCE AT JULY 25, 2020	96	$ 42.03	
Granted and assumed	51	41.89	
Vested	(39)	39.63	$ 1,813
Canceled/forfeited/other	(14)	42.13	
UNVESTED BALANCE AT JULY 31, 2021	94	42.93	
Granted and assumed	52	50.06	
Vested	(37)	42.27	$ 1,979
Canceled/forfeited/other	(12)	45.63	
UNVESTED BALANCE AT JULY 30, 2022	**97**	**46.67**	
Granted and assumed	**72**	**42.08**	
Vested	**(39)**	**46.69**	**$ 1,746**
Canceled/forfeited/other	**(8)**	**45.17**	
UNVESTED BALANCE AT JULY 29, 2023	**122**	**$ 44.04**	

(e) Valuation of Employee Share-Based Awards

Time-based restricted stock units and PRSUs that are based on our financial performance metrics or non-financial operating goals are valued using the market value of our common stock on the date of grant, discounted for the present value of expected dividends. On the date of grant, we estimated the fair value of the total shareholder return (TSR) component of the PRSUs using a Monte Carlo simulation model. The PRSUs granted during the fiscal years presented are contingent on the achievement of our financial performance metrics, our comparative market-based returns, or the achievement of financial and non-financial operating goals.

The assumptions for the valuation of time-based RSUs and PRSUs are summarized as follows:

	RESTRICTED STOCK UNITS		
Years Ended	**July 29, 2023**	July 30, 2022	July 31, 2021
Number of shares granted (in millions)	**70**	50	48
Grant date fair value per share	**$ 42.13**	$ 49.68	$ 42.04
Weighted-average assumptions/inputs:			
Expected dividend yield	**3.4 %**	2.9 %	3.3 %
Range of risk-free interest rates	**3.7% – 5.7%**	0.0% – 3.0%	0.0% – 0.9%

	PERFORMANCE BASED RESTRICTED STOCK UNITS		
Years Ended	**July 29, 2023**	July 30, 2022	July 31, 2021
Number of shares granted (in millions)	**2**	2	2
Grant date fair value per share	**$ 40.44**	$ 59.64	$ 37.91
Weighted-average assumptions/inputs:			
Expected dividend yield	**N/A**	0.4 %	3.6 %
Range of risk-free interest rates	**N/A**	0.0% – 0.7%	0.1% – 0.4%

The assumptions for the valuation of employee stock purchase rights are summarized as follows:

	EMPLOYEE STOCK PURCHASE RIGHTS		
Years Ended	**July 29, 2023**	July 30, 2022	July 31, 2021
Weighted-average assumptions:			
Expected volatility	**28.7 %**	27.9 %	29.2 %
Risk-free interest rate	**2.8 %**	0.1 %	0.3 %
Expected dividend	**3.6 %**	3.2 %	3.2 %
Expected life (in years)	**1.2**	1.2	1.3
Weighted-average estimated grant date fair value per share	**$ 12.40**	$ 12.90	$ 12.46

The valuation of employee stock purchase rights and the related assumptions are for the employee stock purchases made during the respective fiscal years.

We used the implied volatility for traded options (with contract terms corresponding to the expected life of the employee stock purchase rights) on our stock as the expected volatility assumption required in the Black-Scholes model. The implied volatility is more representative of future stock price trends than historical volatility. The risk-free interest rate assumption is based upon observed interest rates appropriate for the term of our employee stock purchase rights. The dividend yield assumption is based on the history and expectation of dividend payouts at the grant date.

(f) Employee 401(k) Plans

We sponsor the Cisco Systems, Inc. 401(k) Plan (the “Plan”) to provide retirement benefits for our employees. As allowed under Section 401(k) of the Internal Revenue Code, the Plan provides for tax-deferred salary contributions and after-tax contributions for eligible employees. The Plan allows employees to contribute up to 75% of their annual eligible earnings to the Plan on a pretax and after-tax basis, including Roth contributions. Employee contributions are limited to a maximum annual amount as set periodically by the Internal Revenue Code. We match pretax and Roth employee contributions up to 100% of the first 4.5% of eligible earnings that are contributed by employees. Therefore, the maximum matching contribution that we may allocate to each participant’s account will not exceed $14,850 for the 2023 calendar year due to the $330,000 annual limit on eligible earnings imposed by the Internal Revenue Code. All matching contributions vest immediately. Our matching contributions to the Plan totaled $342 million, $306 million, and $290 million in fiscal 2023, 2022, and 2021, respectively.

The Plan allows employees who meet the age requirements and reach the Plan contribution limits to make catch-up contributions (pretax or Roth) not to exceed the lesser of 75% of their annual eligible earnings or the limit set forth in the Internal Revenue Code. Catch-up contributions are not eligible for matching contributions. In addition, the Plan provides for discretionary profit-sharing contributions as determined by the Board of Directors. Such contributions to the Plan are allocated among eligible participants in the proportion of their salaries to the total salaries of all participants. There were no discretionary profit-sharing contributions made in fiscal 2023, 2022, and 2021.

We also sponsor other 401(k) plans as a result of acquisitions of other companies. Our contributions to these plans were not material to Cisco on either an individual or aggregate basis for any of the fiscal years presented.

(g) Deferred Compensation Plans

The Cisco Systems, Inc. Deferred Compensation Plan (the “Deferred Compensation Plan”), a nonqualified deferred compensation plan, became effective in 2007. As required by applicable law, participation in the Deferred Compensation Plan is limited to a select group of our management employees. Under the Deferred Compensation Plan, which is an unfunded and unsecured deferred compensation arrangement, a participant may elect to defer base salary, bonus, and/or commissions, pursuant to such rules as may be established by Cisco, up to the maximum percentages for each deferral election as described in the plan. We may also, at our discretion, make a matching contribution to the employee under the Deferred Compensation Plan. A matching contribution equal to 4.5% of eligible compensation in excess of the Internal Revenue Code limit for qualified plans for calendar year 2023 that is deferred by participants under the Deferred Compensation Plan (with a $1.5 million cap on eligible compensation) will be made to eligible participants’ accounts at the end of calendar year 2023. The total deferred compensation liability under the Deferred Compensation Plan, together with deferred compensation plans assumed from acquired companies, was approximately $910 million and $760 million as of July 29, 2023 and July 30, 2022, respectively, and was recorded primarily in other long-term liabilities.

17. Comprehensive Income (Loss)

The components of AOCI, net of tax, and the other comprehensive income (loss) are summarized as follows (in millions):

	Net Unrealized Gains (Losses) on Available-for-Sale Investments	Net Unrealized Gains (Losses) Cash Flow Hedging Instruments	Cumulative Translation Adjustment and Actuarial Gains (Losses)	Accumulated Other Comprehensive Income (Loss)
BALANCE AT JULY 25, 2020	$ 315	$ (6)	$ (828)	$ (519)
Other comprehensive income (loss) before reclassifications	(141)	20	229	108
(Gains) losses reclassified out of AOCI	(53)	(14)	3	(64)
Tax benefit (expense)	61	(1)	(2)	58
BALANCE AT JULY 31, 2021	182	(1)	(598)	(417)
Other comprehensive income (loss) before reclassifications	(731)	87	(647)	(1,291)
(Gains) losses reclassified out of AOCI	(9)	(29)	2	(36)
Tax benefit (expense)	179	(13)	(44)	122
BALANCE AT JULY 30, 2022	**(379)**	**44**	**(1,287)**	**(1,622)**
Other comprehensive income (loss) before reclassifications	**(113)**	**29**	**116**	**32**
(Gains) losses reclassified out of AOCI	**21**	**(63)**	**(1)**	**(43)**
Tax benefit (expense)	**31**	**8**	**19**	**58**
BALANCE AT JULY 29, 2023	**$ (440)**	**$ 18**	**$ (1,153)**	**$ (1,575)**

18. Income Taxes

(a) Provision for Income Taxes

The provision for income taxes consists of the following (in millions):

Years Ended	July 29, 2023	July 30, 2022	July 31, 2021
Federal:			
Current	$ 3,754	$ 2,203	$ 1,959
Deferred	(1,955)	(176)	(203)
	1,799	2,027	1,756
State:			
Current	623	458	513
Deferred	(175)	(156)	(46)
	448	302	467
Foreign:			
Current	412	313	583
Deferred	46	23	(135)
	458	336	448
Total	$ 2,705	$ 2,665	$ 2,671

Income before provision for income taxes consists of the following (in millions):

Years Ended	July 29, 2023	July 30, 2022	July 31, 2021
United States	$ 14,074	$ 13,550	$ 12,335
International	1,244	927	927
Total	$ 15,318	$ 14,477	$ 13,262

The items accounting for the difference between income taxes computed at the federal statutory rate and the provision for income taxes consist of the following:

Years Ended	July 29, 2023	July 30, 2022	July 31, 2021
Federal statutory rate	21.0 %	21.0 %	21.0 %
Effect of:			
State taxes, net of federal tax benefit	2.4	1.7	2.7
Foreign income at other than U.S. rates	(0.1)	0.8	1.5
Tax credits	(0.3)	(1.6)	(1.4)
Foreign-derived intangible income deduction	(5.8)	(3.9)	(4.2)
Stock-based compensation	1.1	0.3	0.6
Other, net	(0.6)	0.1	(0.1)
Total	17.7 %	18.4 %	20.1 %

During fiscal 2023, we resolved certain items with the Internal Revenue Service (IRS) related to the audit of our federal income tax returns for the fiscal years ended July 26, 2014 through July 30, 2016. As a result of the resolution, we recognized a net benefit to the provision for income taxes of $145 million, which included a reduction of interest expense of $53 million.

Foreign taxes associated with the repatriation of earnings of foreign subsidiaries were not provided on a cumulative total of $6.5 billion of undistributed earnings for certain foreign subsidiaries as of the end of fiscal 2023. We intend to reinvest these earnings indefinitely in such foreign subsidiaries. If these earnings were distributed in the form of dividends or otherwise, or if the shares of the relevant foreign subsidiaries were sold or otherwise transferred, we could be subject to additional income and withholding taxes. The amount of potential unrecognized deferred income tax liability related to these earnings is approximately $681 million.

Unrecognized Tax Benefits

The aggregate changes in the balance of gross unrecognized tax benefits were as follows (in millions):

Years Ended	July 29, 2023	July 30, 2022	July 31, 2021
Beginning balance	**$ 3,101**	$ 3,106	$ 2,518
Additions based on tax positions related to the current year	**159**	157	224
Additions for tax positions of prior years	**261**	74	618
Reductions for tax positions of prior years	**(265)**	(81)	(122)
Settlements	**(1,063)**	(69)	(93)
Lapse of statute of limitations	**(56)**	(86)	(39)
Ending balance	**$ 2,137**	$ 3,101	$ 3,106

As a result of resolving certain items related to the IRS audit of our federal tax income tax returns for the fiscal years ended July 26, 2014 through July 30, 2016, the amount of gross unrecognized tax benefits in fiscal 2023 was reduced by approximately $1.1 billion. We also reduced the amount of accrued interest by $69 million.

As of July 29, 2023, $1.7 billion of the unrecognized tax benefits would affect the effective tax rate if realized. We recognized net interest expense of $27 million, $33 million and $74 million during fiscal 2023, 2022, and 2021, respectively. Our net penalty expense for fiscal 2023, 2022, and 2021 was not material. Our total accrual for interest and penalties was $523 million, $486 million, and $444 million as of the end of fiscal 2023, 2022, and 2021, respectively. We are no longer subject to U.S. federal income tax audit for returns covering tax years through fiscal 2013. We are no longer subject to foreign or state income tax audits for returns covering tax years through fiscal 2003 and fiscal 2008, respectively.

We regularly engage in discussions and negotiations with tax authorities regarding tax matters in various jurisdictions. We believe it is reasonably possible that certain federal, foreign, and state tax matters may be concluded in the next 12 months. Specific positions that may be resolved include issues involving transfer pricing and various other matters. We estimate that the unrecognized tax benefits at July 29, 2023 could be reduced by $350 million in the next 12 months.

(b) Deferred Tax Assets and Liabilities

The following table presents the breakdown for net deferred tax assets (in millions):

	July 29, 2023	July 30, 2022
Deferred tax assets	**$ 6,576**	$ 4,449
Deferred tax liabilities	**(62)**	(55)
Total net deferred tax assets	**$ 6,514**	$ 4,394

The following table presents the components of the deferred tax assets and liabilities (in millions):

	July 29, 2023	July 30, 2022
ASSETS		
Allowance for accounts receivable and returns	**$ 81**	$ 90
Sales-type and direct-financing leases	**22**	29
Inventory write-downs and capitalization	**452**	430
Deferred foreign income	**218**	210
IPR&D and purchased intangible assets	**1,082**	1,184
Depreciation	**16**	10
Deferred revenue	**1,801**	1,744
Credits and net operating loss carryforwards	**1,218**	1,336
Share-based compensation expense	**198**	138
Accrued compensation	**328**	333
Lease liabilities	**246**	248
Capitalized research expenditures	**2,042**	149
Other	**484**	439
Gross deferred tax assets	**8,188**	6,340
Valuation allowance	**(754)**	(834)
Total deferred tax assets	**7,434**	5,506
LIABILITIES		
Goodwill and purchased intangible assets	**(602)**	(767)
Unrealized gains on investments	**—**	(26)
ROU lease assets	**(234)**	(237)
Other	**(84)**	(82)
Total deferred tax liabilities	**(920)**	(1,112)
Total net deferred tax assets	**$ 6,514**	$ 4,394

The changes in the valuation allowance for deferred tax assets are summarized as follows (in millions):

	July 29, 2023	July 30, 2022	July 31, 2021
Balance at beginning of fiscal year	**$ 834**	$ 771	$ 700
Additions	**35**	84	91
Deductions	**(18)**	(10)	(5)
Write-offs	**(93)**	(12)	(16)
Foreign exchange and other	**(4)**	1	1
Balance at end of fiscal year	**$ 754**	$ 834	$ 771

As of July 29, 2023, our federal, state, and foreign net operating loss carryforwards before valuation allowance for income tax purposes were $320 million, $879 million, and $524 million, respectively. A significant amount of the net operating loss carryforwards relates to acquisitions and, as a result, is limited in the amount that can be recognized in any one year. If not utilized, the federal, state, and foreign net operating loss carryforwards will begin to expire in fiscal 2024. We have provided a valuation allowance of $82 million and $10 million for deferred tax assets related to foreign and state net operating losses respectively that are not expected to be realized.

As of July 29, 2023, our federal, state, and foreign tax credit carryforwards for income tax purposes before valuation allowance were approximately $5 million, $1.6 billion, and $2 million, respectively. The federal tax credit carryforwards will begin to expire in fiscal 2026. The majority of state and foreign tax credits can be carried forward indefinitely. We have provided a valuation allowance of $594 million for deferred tax assets related to state and foreign tax credits carryforwards that are not expected to be realized.

19. Segment Information and Major Customers

(a) Revenue and Gross Margin by Segment

We conduct business globally and are primarily managed on a geographic basis consisting of three segments: the Americas, EMEA, and APJC. Our management makes financial decisions and allocates resources based on the information it receives from our internal management system. Sales are attributed to a segment based on the ordering location of the customer. We do not allocate research and development, sales and marketing, or general and administrative expenses to our segments in this internal management system because management does not include the information in our measurement of the performance of the operating segments. In addition, we do not allocate amortization and impairment of acquisition-related intangible assets, share-based compensation expense, significant litigation settlements and other contingencies, charges related to asset impairments and restructurings, and certain other charges to the gross margin for each segment because management does not include this information in our measurement of the performance of the operating segments.

Summarized financial information by segment for fiscal 2023, 2022, and 2021, based on our internal management system and as utilized by our Chief Operating Decision Maker (CODM), is as follows (in millions):

Years Ended	**July 29, 2023**	July 30, 2022	July 31, 2021
Revenue:			
Americas	**$ 33,447**	$ 29,814	$ 29,161
EMEA	**15,135**	13,715	12,951
APJC	**8,417**	8,027	7,706
Total	**$ 56,998**	$ 51,557	$ 49,818
Gross margin:			
Americas	**$ 21,350**	$ 19,117	$ 19,499
EMEA	**10,016**	8,969	8,466
APJC	**5,424**	5,241	4,949
Segment total	**36,788**	33,326	32,914
Unallocated corporate items	**(1,035)**	(1,078)	(1,020)
Total	**$ 35,753**	$ 32,248	$ 31,894

Amounts may not sum due to rounding.

Revenue in the United States was $29.9 billion, $26.7 billion, and $26.1 billion for fiscal 2023, 2022, and 2021, respectively.

(b) Revenue for Groups of Similar Products and Services

We design and sell IP-based networking and other products related to the communications and IT industry and provide services associated with these products and their use.

The following table presents revenue for groups of similar products and services (in millions):

Years Ended	**July 29, 2023**	July 30, 2022	July 31, 2021
Revenue:			
Secure, Agile Networks	**$ 29,105**	$ 23,831	$ 22,725
Internet for the Future	**5,306**	5,276	4,511
Collaboration	**4,052**	4,472	4,727
End-to-End Security	**3,859**	3,699	3,382
Optimized Application Experiences	**811**	729	654
Other Products	**9**	11	15
Total Product	**43,142**	38,018	36,014
Services	**13,856**	13,539	13,804
Total	**$ 56,998**	$ 51,557	$ 49,818

Amounts may not sum due to rounding. We have made certain reclassifications to the amounts for prior fiscal years to conform to the current fiscal year's presentation.

(c) Additional Segment Information

No single customer accounted for 10% or more of revenue in fiscal 2023, 2022, and 2021.

The majority of our assets as of July 29, 2023 and July 30, 2022 were attributable to our U.S. operations. Our long-lived assets are based on the physical location of the assets. The following table presents our long-lived assets, which consists of property and equipment, net and operating lease right-of-use assets information for geographic areas (in millions):

	July 29, 2023	July 30, 2022	July 31, 2021
Long-lived assets:			
United States	**$ 2,113**	$ 2,004	$ 2,189
International	**943**	997	1,244
Total	**$ 3,056**	$ 3,001	$ 3,433

20. Net Income per Share

The following table presents the calculation of basic and diluted net income per share (in millions, except per-share amounts):

Years Ended	**July 29, 2023**	July 30, 2022	July 31, 2021
Net income	**$ 12,613**	$ 11,812	$ 10,591
Weighted-average shares—basic	**4,093**	4,170	4,222
Effect of dilutive potential common shares	**12**	22	14
Weighted-average shares—diluted	**4,105**	4,192	4,236
Net income per share—basic	**$ 3.08**	$ 2.83	$ 2.51
Net income per share—diluted	**$ 3.07**	$ 2.82	$ 2.50
Antidilutive employee share-based awards, excluded	**86**	70	69

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

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Based on our management's evaluation (with the participation of our principal executive officer and principal financial officer), as of the end of the period covered by this report, our principal executive officer and principal financial officer have concluded that 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, (the "Exchange Act")) are effective to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms and is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

Internal Control over Financial Reporting

Management's report on our internal control over financial reporting and the report of our independent registered public accounting firm on our internal control over financial reporting are set forth, respectively, on page 57 under the caption "Management's Report on Internal Control Over Financial Reporting" and on page 55 of this report.

There was no change in our internal control over financial reporting during our fourth quarter of fiscal 2023 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

Rule 10b5-1 Trading Arrangements

On June 13, 2023, Jeff Sharritts, Cisco's Executive Vice President and Chief Customer and Partner Officer, adopted a trading plan intended to satisfy the affirmative defense conditions of Rule 10b5-1(c) under the Exchange Act. Mr. Sharritts' trading plan provides for the sale of 146,825 gross shares (with any shares underlying performance-based equity awards being calculated at target), plus any related dividend-equivalent shares earned with respect to such shares and excluding, as applicable, any shares withheld to satisfy tax withholding obligations in connection with the net settlement of the equity awards. Mr. Sharritts' trading plan is scheduled to terminate on June 21, 2024, subject to early termination for certain specified events set forth therein.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

We have adopted a code of ethics that applies to our principal executive officer and all members of our finance department, including the principal financial officer and principal accounting officer. This code of ethics can be found at the “Financial Officer Code of Ethics” link in the Corporate Governance section of Cisco’s Investor Relations website at investor.cisco.com. We intend to satisfy any disclosure requirement regarding an amendment to, or waiver from, a provision of this code of ethics by posting such information on that website or in a report on Form 8-K.

The additional information required by this item is included in our Proxy Statement related to the 2023 Annual Meeting of Stockholders to be filed with the SEC within 120 days after September 7, 2023 (the “Proxy Statement”) and is incorporated herein by reference.

Item 11. Executive Compensation

The information required by this item is included in our Proxy Statement and is incorporated herein by reference.

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

The information required by this item is included in our Proxy Statement and is incorporated herein by reference.

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

The information required by this item is included in our Proxy Statement and is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services

The information required by this item is included in our Proxy Statement and is incorporated herein by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) 1. Financial Statements

See the “Index to Consolidated Financial Statements” on page 54 of this report.

2. Financial Statement Schedule

All financial statement schedules have been omitted, since the required information is not applicable or is shown in the financial statements or notes herein.

3. Exhibits

See the “Index to Exhibits” beginning on page 102 of this report.

INDEX TO EXHIBITS

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
3.1	Amended and Restated Certificate of Incorporation of Cisco Systems, Inc., as currently in effect	8-K12B	001-39940	3.1	1/25/2021	
3.2	Amended and Restated Bylaws of Cisco Systems, Inc., as currently in effect	8-K	001-39940	3.2	3/10/2023	
4.1	Indenture, dated February 17, 2009, between Cisco Systems, Inc. and the Bank of New York Mellon Trust Company, N.A., as trustee	8-K	000-18225	4.1	2/17/2009	
4.2	Indenture, dated November 17, 2009, between Cisco Systems, Inc. and the Bank of New York Mellon Trust Company, N.A., as trustee	8-K	000-18225	4.1	11/17/2009	
4.3	Indenture, dated March 3, 2014, between the Company and The Bank of New York Mellon Trust Company, N.A., as trustee	8-K	000-18225	4.1	3/3/2014	
4.4	First Supplemental Indenture, dated January 25, 2021 to the Indenture, dated February 17, 2009, between Cisco Systems, Inc. and the Bank of New York Mellon Trust Company, N.A., as trustee	10-Q	001-39940	4.1	2/16/2021	
4.5	First Supplemental Indenture, dated January 25, 2021 to the Indenture, dated November 17, 2009, between Cisco Systems, Inc. and the Bank of New York Mellon Trust Company, N.A., as trustee	10-Q	001-39940	4.2	2/16/2021	
4.6	First Supplemental Indenture, dated January 25, 2021 to the Indenture, dated March 3, 2014, between the Company and The Bank of New York Mellon Trust Company	10-Q	001-39940	4.3	2/16/2021	
4.7	Forms of Global Note for the registrant's 5.90% Senior Notes due 2039	8-K	000-18225	4.1	2/17/2009	
4.8	Forms of Global Note for the registrant's 4.45% Senior Notes due 2020 and 5.50% Senior Notes due 2040	8-K	000-18225	4.1	11/17/2009	
4.9	Form of Officer's Certificate setting forth the terms of the Fixed and Floating Rate Notes issued in March 2014	8-K	000-18225	4.2	3/3/2014	
4.10	Form of Officer's Certificate setting forth the terms of the Fixed and Floating Notes issued in June 2015	8-K	000-18225	4.1	6/18/2015	
4.11	Form of Officer's Certificate setting forth the terms of the Fixed and Floating Notes issued in February 2016	8-K	000-18225	4.1	2/29/2016	
4.12	Form of Officer's Certificate setting forth the terms of the Fixed and Floating Notes issued in September 2016	8-K	000-18225	4.1	9/20/2016	
4.13	Description of Registrant's Securities	10-K	001-39940	4.13	9/9/2021	
10.1*	Cisco Systems, Inc. 2005 Stock Incentive Plan (including related form agreements)					X
10.2*	Cisco Systems, Inc. Employee Stock Purchase Plan	10-Q	001-39940	10.7	2/16/2021	
10.3*	Cisco Systems, Inc. Deferred Compensation Plan, as amended	10-Q	001-39940	10.3	11/22/2022	
10.4*	Cisco Systems, Inc. Executive Incentive Plan	8-K	000-18225	10.2	12/12/2017	
10.5*	Form of Indemnity Agreement	8-K12B	001-39940	10.1	1/25/2021	

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
10.6	First Amendment to Second Amended and Restated Credit Agreement, dated as of April 18, 2023, by and among Cisco Systems, Inc., certain lenders party thereto, and Bank of America, N.A., as administration agent, swing line lender, and L/C issuer	10-Q	001-39940	10.1	5/24/2023	
10.7	Commercial Paper Issuing and Paying Agent Agreement, dated September 29, 2022, by and between Cisco Systems, Inc. and Citibank, N.A.	8-K	001-39940	10.1	10/4/2022	
10.8	Form of Amendment to Commercial Paper Dealer Agreement	8-K	001-39940	10.2	10/4/2022	
10.9*	Letter Agreement by and between Cisco Systems, Inc. and Dev Stahlkopf	10-Q	001-39940	10.4	11/22/2022	
21.1	Subsidiaries of the Registrant					X
23.1	Consent of Independent Registered Public Accounting Firm					X
24.1	Power of Attorney (included on page 104 of this Annual Report on Form 10-K)					X
31.1	Rule 13a–14(a)/15d–14(a) Certification of Principal Executive Officer					X
31.2	Rule 13a–14(a)/15d–14(a) Certification of Principal Financial Officer					X
32.1	Section 1350 Certification of Principal Executive Officer					X
32.2	Section 1350 Certification of Principal Financial Officer					X
101.INS	Inline XBRL Instance Document					X
101.SCH	Inline XBRL Taxonomy Extension Schema Document					X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document					X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document					X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document					X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document					X
104	Cover Page Interactive Data File (Embedded within the Inline XBRL document and included in Exhibit 101)					X

* Indicates a management contract or compensatory plan or arrangement.

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this Report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized.

September 7, 2023	CISCO SYSTEMS, INC.
	/S/ CHARLES H. ROBBINS
	Charles H. Robbins **Chair and Chief Executive Officer**

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Charles H. Robbins and R. Scott Herren, jointly and severally, his attorney-in-fact, each with the full power of substitution, for such person, 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 attorney-in-fact and agent 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 do or could do in person hereby ratifying and confirming all that each of said attorneys-in-fact and agents, or his substitute, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this 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.

Signature	Title	Date
/S/ CHARLES H. ROBBINS **Charles H. Robbins**	Chair and Chief Executive Officer (Principal Executive Officer)	September 7, 2023
/S/ R. SCOTT HERREN **R. Scott Herren**	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	September 7, 2023
/S/ M. VICTORIA WONG **M. Victoria Wong**	Senior Vice President and Chief Accounting Officer (Principal Accounting Officer)	September 7, 2023

Signature	Title	Date
/S/ M. MICHELE BURNS **M. Michele Burns**	Director	September 7, 2023
/S/ WESLEY G. BUSH **Wesley G. Bush**	Director	September 7, 2023
/S/ MICHAEL D. CAPELLAS **Michael D. Capellas**	Lead Independent Director	September 7, 2023
/S/ MARK GARRETT **Mark Garrett**	Director	September 7, 2023
/S/ JOHN D. HARRIS II **John D. Harris II**	Director	September 7, 2023
/S/ KRISTINA M. JOHNSON **Dr. Kristina M. Johnson**	Director	September 7, 2023
/S/ RODERICK C. MCGEARY **Roderick C. McGeary**	Director	September 7, 2023
/S/ SARAH RAE MURPHY **Sarah Rae Murphy**	Director	September 7, 2023
/S/ LISA T. SU **Dr. Lisa T. Su**	Director	September 7, 2023
/S/ MARIANNA TESSEL **Marianna Tessel**	Director	September 7, 2023