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

FORM 10-K

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

For the fiscal year ended December 31, 2022
or

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

For the transition period from to
Commission File number 1-7221

MOTOROLA SOLUTIONS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**36-1115800**
(State of Incorporation)	(I.R.S. Employer Identification No.)

500 W. Monroe Street, Chicago, Illinois 60661
(Address of principal executive offices, zip code)

(847) 576-5000
Registrant's telephone number, including area code:

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

Title of Each Class			Trading Symbol(s)	Name of Each Exchange on Which Registered
Common Stock	$0.01	Par Value	MSI	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. Yes ☐ No ☒

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

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

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

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

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

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

The aggregate market value of voting and non-voting common equity held by non-affiliates of the registrant as of July 1, 2022 (the last business day of the registrant's most recently completed second quarter) was approximately $31.0 billion.

The number of shares of the registrant's Common Stock, $.01 par value per share, outstanding as of February 6, 2023 was 167,250,071.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement to be delivered to stockholders in connection with its Annual Meeting of Shareholders to be held on May 16, 2023 (the "Proxy Statement"), are incorporated by reference into Part III of this Annual Report on Form 10-K (this "Form 10-K").

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Throughout this Form 10-K we "incorporate by reference" certain information in parts of other documents filed with the Securities and Exchange Commission (the "SEC"). The SEC allows us to disclose important information by referring to it in that manner. Please refer to such information.

"Motorola Solutions" (which may be referred to as the "Company," "we," "us," or "our") means Motorola Solutions, Inc. or Motorola Solutions, Inc. and its subsidiaries, or one of our segments, as the context requires. MOTOROLA, MOTO, MOTOROLA SOLUTIONS and the Stylized M Logo, as well as iDEN are trademarks or registered trademarks of Motorola Trademark Holdings, LLC and are used under license.

Forward-Looking Statements

Statements in this Form 10-K which are not historical in nature are forward-looking statements within the meaning of applicable federal securities law. These statements are made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 and generally include words such as "believes," "expects," "intends," "aims," "estimates" and similar expressions. We can give no assurance that any future results or events discussed in these statements will be achieved. Any forward-looking statements represent our views only as of today and should not be relied upon as representing our views as of any subsequent date. Readers are cautioned that such forward-looking statements are subject to a variety of risks and uncertainties that could cause our actual results to differ materially from the statements contained in this Form 10-K. Some of these risks and uncertainties include, but are not limited to, those discussed in "Part I. Item 1A. Risk Factors" of this Form 10-K and those described elsewhere in this Form 10-K or in our other SEC filings. Forward-looking statements include, but are not limited to, statements under the following headings: (1) "Business," about: (a) industry growth and demand, including opportunities resulting from such growth, (b) future product development and the demand for, growth related to, and benefits of, new products, (c) growth of sales with existing customers, (d) customer spending and behavior and requests for vendor financing, (e) the impact of our strategy and focus areas, (f) the impact from the loss of key customers, (g) competitive position and our ability to maintain a leadership position in our core products, (h) increased competition, (i) our practice of subcontracting work to other companies to fulfill customer needs, (j) the impact of recent acquisitions on our business, (k) the impact of existing and future regulatory matters (including with respect to climate change) on our business, (l) the firmness of each segment's backlog, (m) the competitiveness of the patent portfolio, (n) the impact of research and development, (o) the availability and costs of materials and components, energy supplies and labor and the impact of such availability and costs, (p) the seasonality of the business, and (q) our human capital management strategy and philosophy; (2) "Risk Factors," about potential impacts of the risks we face; (3) "Legal Proceedings," about the ultimate disposition of pending legal matters and timing; (4) "Management's Discussion and Analysis of Financial Condition and Results of Operations," about: (a) the impact of the Russia-Ukraine conflict on our business and the potential for broader economic disruption, (b) the continuing and future impact of COVID-19 on our business, (c) the availability and costs of materials and components (including inventory levels) and the impact of such availability and costs (including our actions in response to such availability and costs), (d) the impact of inflation on our business, including the impact of the Federal Reserve's interest rate increases and the impact of our actions in response to such inflation, (e) the impact of the American Rescue Plan Act of 2021 on our business, (f) the impact of global economic and political conditions on our business, (g) the impact of the United Kingdom's Competition and Markets Authority's provisional decision regarding Airwave (including our actions in response to such provisional decision) on our business, (h) the impact on our business of our entry into a signed agreement with the Home Office of the United Kingdom for us to exit the Emergency Services Network contract early, (i) the impact of taxes on our business, (j) the impact of acquisitions on our business, (k) the impact of existing and future laws, regulations, international treaties and industry standards relating to climate change on our business, (l) market growth/contraction, demand, spending and resulting opportunities, (m) industry growth and demand, including opportunities resulting from such growth, (n) future product development and demand for, growth related to, and benefits of, new products, (o) the impact of foreign exchange rate fluctuations, (p) our continued ability to reduce our operating expenses, (q) expected impacts to operating leverage and operating margins, (r) the growth of sales opportunities in our LMR Communications, Video Security and Access Control and Command Center technologies, (s) the return of capital to shareholders through dividends and/or repurchasing shares, (t) the impact and success of our business strategy and portfolio, (u) future payments, charges, and use of accruals associated with our reorganization of business programs and employee separation costs, (v) our ability and cost to repatriate funds, (w) future cash contributions to pension plans or retiree health benefit plans, (x) the liquidity of our investments, (y) our ability and cost to access the capital markets, (z) our ability to borrow and the amount available under our credit facilities, (aa) adequacy of internal resources to fund expected working capital and capital expenditure measurements, (bb) expected payments pursuant to commitments under agreements and other obligations in the short-term and long-term, (cc) the ability to meet minimum purchase obligations, (dd) the impact of contractual damage claims exceeding the underlying contract value, (ee) our ability to sell accounts receivable and the terms and amounts of such sales, (ff) the outcome and effect of ongoing and future legal proceedings, and (gg) the impact of the adoption of accounting pronouncements on our financial results; and (5) "Quantitative and Qualitative Disclosures about Market Risk," about: (a) the impact of foreign currency risk, (b) the impact of interest rate risk, and (c) future hedging activity and expectations of the Company.

PART I

Item 1: Business

Overview

Motorola Solutions is a global leader in public safety and enterprise security. Our technologies in Land Mobile Radio Communications ("LMR" or "LMR Communications"), Video Security and Access Control ("Video") and Command Center, bolstered by managed and support services, help make communities safer and businesses stay productive and secure. We serve more than 100,000 public safety and commercial customers in over 100 countries, providing “purpose-built” solutions designed for their unique needs, and we have a rich heritage of innovation focusing on advancing global safety for more than 90 years.

We are incorporated under the laws of the State of Delaware as the successor to an Illinois corporation, Motorola, Inc., organized in 1928. We changed our name from Motorola, Inc. to Motorola Solutions, Inc. on January 4, 2011. Our principal executive offices are located at 500 W. Monroe St., Chicago, Illinois 60661.

Business Organization

We manage our business organizationally through two segments: “Products and Systems Integration” and “Software and Services.” Within these segments, we have principal product lines that also follow our three major technologies: LMR Communications, Video and Command Center. In January 2023, we began using Command Center as a naming convention, eliminating the "Software" descriptor from Command Center Software in order to inform investors that the Company has software components more broadly across all technologies; this name change does not require any financial information to be reclassified from previous periods.

- LMR Communications: Infrastructure, devices (two-way radio and broadband, including both for public safety and professional and commercial radio ("PCR")) and software that enable communications, inclusive of installation and integration, backed by services, to assure availability, security and resiliency.
- Video: Cameras (fixed, body-worn, in-vehicle), access control, infrastructure, video management, software and artificial intelligence ("AI")-enabled analytics that enable visibility “on scene” and bring attention to what’s important.
- Command Center: Software suite that enables collaboration and shares information throughout the public safety workflow from "911 call to case closure."

The Company has invested across these three technologies, evolving the Company’s LMR focus to purposefully integrate software, video security and access control solutions for public safety and enterprise customers globally.

Our strategy is to generate value through the integration of critical communications, video security, access control and data and analytics. While each technology individually strives to make users safer and more productive, we believe we can enable better outcomes for our customers when we unite these technologies as one connected system. Our goal is to help remove silos between systems, unify data, streamline workflows and simplify operations for our customers. Across all three technologies, we offer cloud-based solutions, cybersecurity services, software and subscription services as well as managed and support services.

The schools we serve provide an example of our integrated technology ecosystem in action, which can be tailored to a school's unique needs and can span the end-to-end workflow for daily school operations as well as for emergencies. Video security and analytics such as license plate recognition can alert security and help identify potentially suspicious activities, influencing building access. AI-powered video analytics can search video footage and help locate individuals based on physical descriptions. Software can help share real-time alerts and live video feeds with school officials and public safety agencies for incident response. Voice and data communications can notify school employees of security breaches, while mass notification and incident management platforms can help to coordinate an emergency response across school safety personnel, local law enforcement and administrators. Together, these technologies can help schools to detect, analyze, communicate and manage safety and security threats.

The principal products within each segment, by technology, are described below:

Products and Systems Integration Segment

In 2022, the segment’s net sales were $5.7 billion, representing 63% of our consolidated net sales.

LMR Communications

Our LMR Communications technology includes infrastructure and devices for LMR, public safety Long Term Evolution (“LTE”) and enterprise-grade private LTE. Our technology enables voice and multimedia collaborations across two-way radio, WiFi and public and private broadband networks. We are a global leader in the two-way radio category, including Project 25 (P25), Terrestrial Trunked Radio (“TETRA”) and Digital Mobile Radio (DMR), as well as other PCR solutions. We also deliver LTE solutions for public safety, government and commercial users, including infrastructure and devices operating in both low-band and mid-band frequencies, including Citizens’ Broadband Radio Service (CBRS) frequencies. Primary sources of revenue for this technology come from selling devices and building telecommunications networks, including infrastructure, installation and integration with our customers’ technology environments.

We believe that public safety agencies and enterprises continue to trust LMR communications systems and devices because they are purpose-built and designed for reliability, availability, security and resiliency to withstand the most challenging conditions.

By adding broadband data capabilities to our two-way radios, we strive to provide our customers with greater functionality and multimedia access to the information and data they need in their workflows. Examples include application services such as GPS location to better protect lone workers, job dispatch to share detailed information and over-the-air programming to optimize device uptime. Our view is that complementary data applications such as these enable government, public safety and enterprise customers to work more efficiently and safely, while maintaining their mission-critical voice communications to remain connected and working in collaboration with others.

The LMR technology within the Products and Systems Integration segment represented 82% of the net sales of the total segment in 2022.

Video

Our Video technology includes video management infrastructure, AI video powered security cameras including fixed and certain mobile video equipment as well as on-premise and cloud-based access control solutions. Since 2018, we have developed our video security and access control business through investments in research and development and acquisitions, directly contributing to our growth strategy to serve as a leader in end-to-end video security solutions and supporting the expansion of our portfolio.

We deploy video security and access control solutions to thousands of government and commercial customers around the world including school campuses, transportation systems, healthcare centers, public venues, utilities, prisons, factories, casinos, airports, financial institutions, government facilities, state and local law enforcement agencies and retailers. Organizations such as these utilize video security and access control to verify critical events or incidents in real-time and to provide data to investigate an event or incident after it happens.

Our view is that government and public safety customers in particular are increasingly turning to video security technologies, including fixed and mobile cameras, to increase visibility, accountability and safety for citizens, communities and first responders alike. Additionally, our view is that government, public safety agencies and businesses are increasingly turning to scalable, cloud-based multi-factor authentication access control to make their facilities more secure.

The Video technology within the Products and Systems Integration segment represented 18% of the net sales of the total segment in 2022.

Software and Services Segment

In 2022, the segment’s net sales were $3.4 billion, representing 37% of our consolidated net sales.

LMR Communications

LMR Communications services include support and managed services, which offer a broad continuum of support for our customers. Support services include repair and replacement, technical support and preventative maintenance, and more advanced offerings such as system monitoring, software updates and cybersecurity services. Managed services range from partial to full operational support of customer-owned or Motorola Solutions-owned networks. Our customers’ systems often have multi-year or multi-decade lifespans that help drive demand for software upgrades, device and infrastructure refresh opportunities, as well as additional services to monitor, manage, maintain and secure these complex networks and solutions. We strive to deliver services to our customers that help improve performance across their systems, devices and applications for greater safety and productivity.

Given the mission-critical nature of our customers’ operational environments, we aim to design the LMR networks they rely on for availability, security and resiliency. We have a comprehensive approach to system upgrades that addresses hardware, software and implementation services. As new system releases become available, we work with our customers to upgrade software, hardware, or both, with respect to site controllers, comparators, routers, LAN switches, servers, dispatch consoles, logging equipment, network management terminals, network security devices such as firewalls and intrusion detection sensors, and more, on-site or remotely.

The LMR technology within the Software and Services segment represented 67% of the net sales of the total segment in 2022.

Video

Video software includes video management software, decision management and digital evidence management software, certain mobile video equipment, and advanced vehicle location data analysis software, including license plate recognition. Our software is designed to complement video hardware systems, providing end-to-end video security to strive to keep people, property and assets safe.

Our video network management software is embedded with AI-enabled analytics to deliver operational insights to our customers by bringing attention to important events within their video footage. Given the growing volume of video content, we believe that analytics are critical to deliver meaningful, action-oriented insights. Our view is that these insights can help to proactively detect an important event in real time as well as reactively search video content to detect an important event that occurred in the past. For example, AI-enabled analytics can highlight unusual behavior such as a person at a facility out of hours, locate a missing child at a theme park with Appearance Search, flag a vehicle of interest at a school through license plate recognition, or send an alert through access control if doors are propped open at a hospital.

Our cloud technologies can offer organizations the ability to access, search and manage their video security and access control system from a centralized dashboard, accessible on devices such as smartphones and laptops. Additionally, our Avigilon fixed video systems can be cloud-administered by connecting to Avigilon Cloud Services (ACS), providing our customers with the ability to securely access video across their sites from a remote or central monitoring location.

Our Video services include our "video-as-a-service" subscription-based offerings for law enforcement, simplifying procurement by bundling hardware and software into a single subscription. For example, body-worn cameras and in-car video systems can be paired with either on-premises or cloud-based digital evidence management software and complementary command center products. Our cloud solutions are also sold as-a-service, available as single-year to multi-year hosted services, supporting our customers with upgrades and software enhancements to help ensure system performance and technological advancement.

The Video technology within the Software and Services segment represented 15% of the net sales of the total segment in 2022.

Command Center

Our Command Center portfolio consists of native cloud and on-premises software solutions that support the complex process of the public safety workflow from "911 call to case closure." From the moment a person contacts 911, an array of individuals engage to gather information to coordinate a response and manage the post-incident resolution. These individuals include dispatchers who route calls to police, fire and emergency medical services, first responders in the field, intelligence analysts who manage real-time operations, records specialists who preserve the integrity of information and evidence, crime analysts who identify patterns and accelerate investigations, and corrections officers who oversee jail and inmate management.

Additionally, to help ensure that individuals within the public safety workflow can work as efficiently, effectively and safely as possible, we believe it’s important that individuals within enterprise settings can communicate and collaborate directly with public safety agencies, particularly during emergencies. We remain focused on strengthening the intersection of public safety and enterprise security, offering solutions that are designed to help individuals, businesses and public safety agencies work together and share the information that better informs people to take appropriate action.

Our Command Center software supports these individuals through the three phases of incident response: incident awareness, incident management and post-incident resolution. Incident awareness software includes community engagement applications for tip submissions, crime mapping and evidence submission, panic buttons that can share real-time incident details and location, 911 call management software (including multimedia) and next-generation core services for 911 call routing. Incident management software includes voice and computer aided dispatch (CAD) for dispatch and coordinating first response, mass notification software, collaboration software to share operational updates, real-time intelligence software that shows a single, real-time view of video feeds and other alerts on a map, and field response and reporting to help frontline personnel collaborate, manage incident activity and file reports from the field. Post-incident resolution software includes centralized records and evidence management for record-keeping and judicial sharing, analytics including license plate recognition, and jail and inmate management to streamline the process and enable secure inter-agency information sharing.

As the public safety market continues to leverage both on-premises and cloud "software-as-a-service" (SaaS) technologies to efficiently run their operations, reduce response times and increase officer availability, we offer both native cloud-based applications and cloud features that enhance on-premises applications. We believe our products and services enhance first responders’ situational awareness and safety by integrating critical communications, video security, data and analytics to provide an all-in-one operational view of the incident.

Another area of public safety evolution is increasing adoption of Next Generation 911 Core Services (“NGCS”), a group of products and services needed to create infrastructure connectivity in order to process a 911 call using Next Generation (“NG”) technology. The NG infrastructure is an Emergency Service IP Network ("ESInet"), which can carry voice, data and multimedia. ESInet enables 911 call takers at public safety answering points to respond to text, video and data. Our NGCS can be offered as a managed service and includes call routing, ESInet, location services, geographic information services, cybersecurity and our continuous network and security operations center dedicated to public safety.

Additionally, Command Center includes interoperability software that helps to ensure communication is not limited by coverage area, network technology or device type. Our solutions, including Kodiak, WAVE PTX and CriticalConnect, enable interoperability among devices across multiple networks. For example, a two-way radio network can connect with an LTE network making it possible for individuals to communicate securely and more easily across technologies.

The Command Center technology within the Software and Services segment represented 18% of the net sales of the total segment in 2022.

Our Customers and Contracts

We serve government agencies, state and local public safety agencies, as well as commercial and industrial customers. Our customer base is fragmented and widespread when considering the many levels of government public safety agency and private sector decision-makers that procure and use our products and services. Serving this global customer base spanning federal, state, county, province, territory, municipal, and departmental independent bodies, along with our commercial and industrial customers, requires a significant go-to-market investment.

Our sales model includes both direct sales by our in-house sales force, which tends to focus on our largest accounts, and sales through our channel partner program. Our trained channel partners include independent dealers, distributors and software vendors around the world. The dealers and distributors each have their own sales organizations that complement and extend the reach of our sales force. The independent software vendors offer customized applications that meet specific needs of the customers we serve.

Our largest customers are the U.S. government (through multiple contracts with its various branches and agencies, including the armed services) and the Home Office of the United Kingdom ("the UK"), each representing approximately 7% of our consolidated net sales in 2022. The loss of these customers could have a material adverse effect on our revenue and earnings over several quarters as many of our contracts with these governments are long-term in nature. All contracts with the U.S. government, and certain other government agencies within the U.S., are subject to cancellation at the customer's convenience. For a discussion of risks related to government contracting requirements, please refer to "Part I. Item 1A. Risk Factors" in this Form 10-K.

Payment terms with our customers vary worldwide. Generally, contractual payment terms range from 30 to 45 days from the invoice date within North America and typically do not exceed 90 days from the invoice date in regions outside of North America. A portion of our contracts include implementation milestones, such as delivery, installation, and system acceptance, which generally take 30 to 180 days to complete. Invoicing the customer is dependent on completion of the milestones. We generally do not grant extended payment terms. As required for competitive reasons, we may provide long-term financing in connection with equipment purchases. Financing may cover all or a portion of the purchase price. Refer to "Part I. Item 1A. Risk Factors" in this Form 10-K for a discussion of risks related to requests by customers to provide vendor financing.

Generally, our contracts do not include a right of return, other than for standard warranty provisions. Due to customer purchasing patterns and the cyclical nature of the markets we serve, our sales tend to be somewhat higher in the second half of the year, with the fourth quarter being the highest.

Competition

We operate in highly competitive markets that are sensitive to technological advances. Competitive factors in these markets include product quality and reliability, technological capabilities, cost-effectiveness and industry experience. In operating in these competitive markets, we have broadened how we work with our customers, expanding from our global LMR installed base to integrate Video and Command Center. For example, our Command Center suite can integrate our customers' LMR systems to provide unified voice and data information throughout the critical 911 workflow. Adding Video enables multimedia collaboration and offers visibility for police officers within the command center and in the field. The interplay of technologies, guided by our deep knowledge of the public safety and enterprise workflows, delivers customers one connected system to unify their critical communications, video security, access control, data, and analytics streams.

We experience widespread competition from a growing number of existing and new competitors, including large system integrators and manufacturers of private and public wireless network equipment and devices. As demand for fully integrated technologies continues to grow, we may face additional competition from public telecommunications carriers and telecommunications equipment providers to small video solutions startups.

As we continue to evolve our services strategy, we may subcontract work to other companies to fulfill customer needs in geographical areas that we do not have coverage for or for additional services that we do not provide. For a description of risks related to our use of the services of subcontractors, refer to "Part I. Item 1A. Risk Factors" of this Form 10-K.

Our major competitors within our LMR, Video and Command Center technologies include the following companies:

Technology	Competitor
LMR	L3Harris Technologies, Hytera, Airbus, JVCKenwood Corporation, BK Technologies, iCOM, RCA, Sepura, Tait
Video	Axis Communications, Hikvision, Dahua Technology Company, Hanwha Group, Genetec, Axon Enterprise, Bosch Security Systems, Milestone Systems, LenelS2, Brivo, Allegion, Assa Abloy, dormakaba, SALTO, Spectrum Brands
Command Center	CentralSquare Technologies, Axon Enterprise, Tyler Technologies, Intrado, Intergraph Corporation, Zetron, ComTech Telecommunications, RapidDeploy, Mark43, Hexagon, Genetec, SOMA Global, AlertMedia, Everbridge, Omnilert, Onsolve

Other Information

Backlog

Our backlog includes orders that have been received and are believed to be firm. As of December 31, 2022 and December 31, 2021, our backlog was as follows:

	December 31	
(In millions)	***2022***	*2021*
Products and Systems Integration	$ 4,900	$ 4,006
Software and Services	9,447	9,553
	$ 14,347	$ 13,559

Approximately 60% of the Products and Systems Integration segment backlog and 25% of the Software and Services segment backlog is expected to be recognized as revenue during 2023. The firmness of such orders is subject to future events that may cause the amount recognized to change.

Recent Acquisitions

Technology	Segment	Acquisition	Description	Purchase Price	Date of Acquisition
Command Center	Software and Services	Rave Mobile Safety, Inc. ("Rave Mobile")	Provider of mass notification and incident management services.	$553 million and share-based compensation of $2 million	December 14, 2022
LMR Communications	Products and Systems Integration	Futurecom Systems Group, ULC	Provider of radio coverage extension solutions.	$30 million	October 25, 2022
LMR Communications	Products and Systems Integration	Barrett Communications Pty Ltd	Provider of specialized radio communications.	$18 million	August 8, 2022
Video Security and Access Control	Products and Systems Integration	Videotec S.p.A.	Provider of ruggedized video security solutions.	$23 million and share-based compensation of $4 million	May 12, 2022
Video Security and Access Control	Software and Services	Calipsa, Inc.	Provider of cloud-native advanced video analytics.	$39 million and share-based compensation of $4 million	April 19, 2022
LMR Communications	Software and Services	TETRA Ireland Communications Limited	Provider of Ireland's National Digital Radio Service.	$120 million	March 23, 2022
Video Security and Access Control	Products and Systems Integration Software and Services	Ava Security Limited	Provider of cloud-native video security and analytics.	$388 million and share-based awards and compensation of $7 million	March 3, 2022
Command Center	Software and Services	911 Datamaster, Inc.	Provider of Next Generation 911 data solutions that help to ensure emergency calls are accurately located and routed based on the caller's location.	$35 million and share-based compensation of $3 million	December 16, 2021
Video Security and Access Control	Products and Systems Integration Software and Services	Envysion, Inc.	Provider of enterprise video security and business analytics.	$124 million and share-based compensation of $1 million	October 29, 2021
Video Security and Access Control	Products and Systems Integration Software and Services	Openpath Security, Inc.	Provider of cloud-based mobile access control.	$298 million and share-based compensation of $29 million	July 15, 2021
Command Center	Software and Services	Callyo	Provider of cloud-based mobile applications for law enforcement in North America, including critical mobile technological capabilities that enable information to flow seamlessly from the field to the command center.	$63 million, inclusive of share-based compensation of $3 million	August 28, 2020

Video Security and Access Control	Products and Systems Integration Software and Services	Pelco, Inc.	Global provider of video security solutions, adding a broad range of products for a variety of commercial and industrial environments and use cases.	$110 million	July 31, 2020
Video Security and Access Control	Products and Systems Integration Software and Services	IndigoVision Group plc	Provider of video security solutions to enhance geographical reach across a wider customer base.	$37 million	June 16, 2020
LMR Communications	Software and Services	Unnamed cybersecurity services business	Provider of vulnerability assessments, cybersecurity consulting, and managed services, including security monitoring of network operations.	$32 million	April 30, 2020
LMR Communications	Software and Services	Unnamed cybersecurity services business	Provider of vulnerability assessments, cybersecurity consulting, managed services, and remediation and response capabilities.	$40 million, inclusive of share-based compensation of $6 million	March 3, 2020

Research and Development

We prioritize investments in research and development ("R&D") to expand and improve our products through both new product introductions and continuous enhancements to our core products. Our R&D programs are focused on the development of: LMR Communications, Video and Command Center.

R&D expenditures were $779 million in 2022, $734 million in 2021 and $686 million in 2020. As of December 31, 2022, we had approximately 8,000 employees engaged in R&D activities. In addition, we engage in R&D activities with joint development and manufacturing partners and outsource certain activities to engineering firms to further supplement our internal spend.

Intellectual Property Matters

Patent protection is an important aspect of our operations. We have a portfolio of U.S. and foreign utility and design patents relating to our products, systems and technologies, including developments in radio frequency technology and circuits, wireless network technologies, over-the-air protocols, mission-critical communications, software and services, video security and access control, and next-generation public safety. We also file new patent applications with the U.S. Patent and Trademark Office and foreign patent offices.

We license some of our patents to third-parties, but licensing is not a significant source of revenue for our business. We are also licensed to use certain patents owned by others. Royalty and licensing fees vary from year-to-year and are subject to the terms of the agreements and sales volumes of the products subject to the license. Motorola Solutions has a royalty-free license under all of the patents and patent applications assigned to Motorola Mobility at the time of the separation of the two businesses in 2011.

We actively participate in the development of standards for interoperable, mission-critical digital two-way radio systems. Our patents are used in standards in which our products and services are based. We offer standards-based licenses to those patents on fair, reasonable and non-discriminatory terms.

We believe that our patent portfolio will continue to provide us with a competitive advantage in our core product areas as well as provide leverage in the development of future technologies. While we are not dependent upon a single patent or even a few patents, we do have patents that protect features and functionality of our products and services. While these patents are important, our success also depends upon our extensive know-how, innovative culture, technological leadership and distribution channels. We do not rely solely on patents or other intellectual property rights to protect or establish our market position; however, we will enforce our intellectual property rights when it is necessary to protect our innovation, or in some cases where attempts to negotiate mutually-agreeable licenses are not successful.

We seek to obtain patents, copyright registrations, and trademark registrations to protect our proprietary positions whenever possible and wherever practical. As of December 31, 2022, we owned approximately 6,530 granted patents in the U.S. and foreign countries and had approximately 870 U.S. and foreign patent applications pending. Foreign patents and patent applications are mostly counterparts of our U.S. patents. During 2022, we were granted approximately 376 patents in the U.S. and in foreign countries.

We no longer own certain logos and other trademarks, trade names and service marks, including MOTOROLA, MOTO, MOTOROLA SOLUTIONS and the Stylized M logo and all derivatives thereof (“Motorola Marks”) and, since 2010, we have licensed the Motorola Marks from Motorola Trademark Holdings, LLC. which is currently owned by Motorola Mobility. For a description of the risks we face related to intellectual property, refer to “Part I. Item 1A. Risk Factors” in this Form 10-K.

Inventory and Raw Materials

Our practice is to carry inventory levels to meet customers' delivery requirements. In 2022, we increased our carrying levels of inventory in response to increased demand for our products and to actively manage supply chain disruptions, including those related to the COVID-19 pandemic and semiconductor shortages. We provide custom products that require the stocking of inventories and a large variety of piece parts and replacement parts in order to meet delivery and warranty requirements. To the extent supplier product life cycles are shorter than ours, stocking of lifetime buy inventories is required to meet long-term warranty and contractual requirements. In addition, replacement parts are stocked for delivery on customer demand within a short delivery cycle.

Availability of required materials and components is generally dependable; however, particularly within the semiconductor market, fluctuations in supply and market demand in 2022 caused selective shortages and increased costs driven by the need to purchase semiconductor components from alternative sources, including brokers. While we continued to navigate supply chain constraints in 2022, we anticipate the broader impact of inflationary pressures driven by material and supply chain costs and disruptions (including elevated costs to procure materials within the semiconductor market) to continue into 2023. For a description of risks related to our supply chain, including relating to the COVID-19 pandemic and the semiconductor market, refer to "Part I. Item 1A. Risk Factors" in this Form 10-K.

We currently procure certain materials and components from single-source vendors. In addition, we import materials and components that are subject to import duties. The duties and tariffs we are subject to do not have a significant impact on our financial results. A material disruption from a single-source vendor may have a material adverse impact on our results of operations. If certain single-source suppliers were to become capacity constrained or insolvent, it could result in a reduction or interruption in supplies, or an increase in the price of supplies, and adversely impact our financial results.

Natural gas, electricity and, to a lesser extent, oil are the primary sources of energy for our manufacturing operations. Each of these resources is currently in adequate supply for our operations. The cost to operate our facilities and freight costs are dependent on world oil prices and external third-party logistics rates for inbound and outbound air lanes. Freight costs were also impacted by disruptions in transportation related to the COVID-19 pandemic in 2022; however, we expect global transportation costs to decrease in 2023 compared to 2022. Labor is generally available in reasonable proximity to our manufacturing facilities and the manufacturing facilities of our largest outsourced manufacturing suppliers. Difficulties in obtaining any of the aforementioned resources, or significant cost increases, could affect our financial results.

Government Regulations

Environment, Worker Health and Safety & Climate Regulations

Some of our operations use substances regulated under various federal, state, local and international laws governing the environment and worker health and safety, including those governing the discharge of pollutants into the ground, air and water, the management and disposal of hazardous substances and wastes, and the cleanup of contaminated sites, as well as relating to the protection of the environment. Certain products of ours are subject to various federal, state, local and international laws governing chemical substances in electronic products.

Certain aspects of our operations and supply chain have become, and are expected to become increasingly subject to federal, state, local and international laws, regulations and international treaties and industry standards relating to climate change. For example, in the European Union (the "EU"), the EU Corporate Sustainability Reporting Directive, Corporate Sustainability Due Diligence Directive and EU taxonomy initiatives will introduce additional due diligence and disclosure requirements addressing sustainability that we expect will apply to us in the coming years.

Radio Spectrum Regulations

Radio spectrum is required to provide wireless voice, data and video communications service. The allocation of spectrum is regulated in the U.S. and other countries and limited spectrum is allocated to wireless services and specifically to public safety users. We manufacture and market products and provide services in spectrum bands already allocated by regulatory bodies. These include voice and data infrastructure, mobile radios and portable or hand-held devices. Consequently, our results could be positively or negatively affected by the rules and regulations adopted by regulatory agencies. Our products operate both on licensed and unlicensed spectrum. The availability of additional radio spectrum may provide new business opportunities. Conversely, the loss of available radio spectrum may result in the loss of business opportunities. Regulatory changes in current spectrum bands (e.g., the sharing of previously dedicated or other spectrum) may also provide opportunities or may require modifications to some of our products so they can continue to be manufactured and marketed. Based on growing demands for broadband, regulators continue to consider repurposing narrowband spectrum to broadband.

Telecommunications Regulations

Certain of our offerings include telecommunications or other communications services that are subject to regulation in various federal, state, and international jurisdictions. For example, we are a provider of selective routing services for 911 calls in the US, which subjects us to various federal and state regulations including those for 911 service reliability. We also provide WAVE PTX push-to-talk offerings with and without telecommunications connectivity in various countries in the EU. Additional types of regulations applicable to our offerings that include telecommunications or other communications services may include certification or licensing requirements, lawful intercept compliance obligations, cybersecurity and incident response obligations, and regulatory fee requirements. If we do not comply with applicable rules and regulations, we could be subject to enforcement actions, fines, and restrictions on our ability to operate or offer certain of our services.

Data Privacy Regulations

The U.S. federal government and many state and local governments have adopted or are considering laws or regulations governing the use of AI and biometrics, including facial recognition and license plate recognition technology, which may in some instances cover certain products and services we offer (references to privacy-related legislation or laws in this document encompass all of these technologies). Similar laws and regulations are being enacted or considered in some jurisdictions outside the U.S., including the EU.

Compliance with the laws currently in effect described above did not have a material effect upon our capital expenditures, earnings or competitive position in 2020 through 2022. For a description of the risks we face related to these and other regulatory matters, refer to "Part 1. Item 1A. Risk Factors" of this Form 10-K.

Human Capital Management

We have a "people first" philosophy. Our employees are our driving force, drawn from all segments of our global society to make a difference for our customers.

As of December 31, 2022, we employed approximately 20,000 people globally with 53% in the North America region and 47% in the International region. Of our total global employees, 40% were employed in engineering. Our goal is to foster a workplace where our employees feel that their unique opinions, cultures and abilities contribute to their personal success, as well as our Company's success.

We believe the next big idea can come from anyone, anywhere, at any time. We offer structured mentorship programs and invest in employees' development and training enabling them to network, develop and grow their skills to influence the future of public safety and enterprise security. Employees also have access to a wide variety of technical, functional, and professional skills learning resources, including virtual, self-directed courses and on-the-job learning opportunities.

We strive for business growth by creating a supportive, equitable and inclusive environment where employees feel engaged, connected to our business and invested in the collective success of our customers and communities. Our human resources team works with leaders within each business function to perform annual talent reviews to assess the performance of every team member and identify development opportunities. This comprehensive process fosters growth across our Company by focusing on our high-potential talent and the rigor of succession plan development for our most critical roles. As part of our compensation philosophy, we strive to offer and maintain market-competitive wages, incentives, and benefits for our employees to attract and retain talent, and we review our rewards programs each year in an effort to ensure they are competitive with local market practices in the industries and countries where we operate. More specifically, our total rewards package for our global employees includes broad-based stock grants and bonuses, an employee stock purchase plan, healthcare, wellness and retirement benefits, paid parental and family leave, commuter benefits, paid time off (including flexible time off for U.S. exempt employees), flexible work options and other assistance and support for employees going through life-changing events.

We strive to embed diversity, equity and inclusion ("DEI") across the Company. We continue to incorporate DEI practices into our hiring, and have created partnerships with organizations that help generate and recruit a diverse talent pipeline. We also continue to provide programs within our internal DEI strategic plan. In 2022, our program included development initiatives for high-potential women leaders, events about culture and diversity, a talent recruiting event with students from Historically Black Colleges and Universities, an expanded revision of our marketing, sales and communications materials in an effort to eliminate non-inclusive language and terminology from such materials, and continued DEI education for our global workforce. Also in 2022, we introduced affinity groups to provide a new way for employees with shared interests to create connections and build relationships and grew membership within our eight business councils with the goal of enabling employees from diverse backgrounds to feel a sense of belonging in a supportive community and safe environment. Finally, we published mid-year demographic data on our DEI website, including regarding employees who self identify as LGBTQ+, Veteran or Persons with Disabilities. The Motorola Solutions Foundation also increased its charitable granting as compared to 2021.

The safety of our employees remains a priority, and we continuously strive to provide a safe and injury-free workplace, using our global environmental, health and safety ("EHS") management system to ensure program and reporting consistency at all of our sites. Our general approach includes assessing risks and identifying controls through the use of our comprehensive job hazard and risk assessment tool. Throughout the COVID-19 pandemic, we have remained focused on protecting the health and safety of our employees

Additional information regarding how our purpose and ethics informs our approach to corporate responsibility can be found in our 2021 Corporate Responsibility Report, which is available on our website. The information contained on or accessible through our corporate website, including but not limited to our DEI website and our 2021 Corporate Responsibility Report, is not incorporated by reference into and is not a part of this Form 10-K.

Material Dispositions

None.

Available Information

We make available free of charge through the Investor Relations section of our website, www.motorolasolutions.com/investors, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements, other reports filed under the Securities Exchange Act of 1934, as amended ("Exchange Act"), and all other reports and amendments filed with, or furnished to, the SEC simultaneously or as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. Our reports are also available free of charge on the SEC's website, www.sec.gov. Also available free of charge on our website as provided above are the following corporate governance documents:

- Motorola Solutions, Inc. Restated Certificate of Incorporation with Amendments
- Conformed Restated Certificate of Incorporation of Motorola Solutions, Inc. (amended Jan. 4, 2011)
- Certificate of Amendment to the Restated Certificate of Incorporation of Motorola, Inc. (effective Jan. 4, 2011)
- Certificate of Ownership and Merger of Motorola Name Change Corporation into Motorola, Inc. (effective Jan. 4, 2011)
- Motorola Solutions, Inc. Amended and Restated Bylaws
- Board Governance Guidelines
- Director Independence Guidelines
- Principles of Conduct for Members of the Motorola Solutions, Inc. Board of Directors
- Motorola Solutions Code of Business Conduct, which is applicable to all Motorola Solutions employees, including the principal executive officers, the principal financial officer and the controller (principal accounting officer)
- Audit Committee Charter
- Compensation and Leadership Committee Charter
- Governance and Nominating Committee Charter

All of our reports and corporate governance documents may also be obtained electronically and without charge by contacting Investor Relations at *investors@motorolasolutions.com*. Our website (including our DEI website referenced above) and the information contained therein or incorporated therein are not incorporated by reference into and are not a part of this Form 10-K.

Item 1A: Risk Factors

You should carefully consider the risks described below in addition to our other filings with the SEC and the other information set forth in this Form 10-K, including the "Management's Discussion and Analysis of Financial Conditions and Results of Operations" section in Part II. Item 7 and our consolidated financial statements in Part II. Item 8. If any of the risks and uncertainties described in the cautionary factors described below actually occur or continue to occur, our business, financial condition, results of operations, reputation and the trading price of our common stock could be materially and adversely affected. These risks may be amplified by the effects of macroeconomic events or developments, such as inflationary pressures, supply chain constraints, the Russia-Ukraine conflict and the ongoing COVID-19 pandemic. Moreover, the risks below are not the only risks we face and additional risks not currently known to us or that we presently deem immaterial may emerge or become material at any time and may negatively impact our business, financial condition, results of operations, reputation or the trading price of our common stock.

Risks Related to Laws and Regulations

We are subject to complex and changing laws and regulations in various jurisdictions regarding privacy, data protection and information security, which exposes us to increased costs and potential liabilities in the event of any actual or perceived failure to comply with such legal obligations and could adversely affect our business.

The EU adopted the General Data Protection Regulation ("GDPR") which took effect on May 25, 2018, harmonizing data protection laws across the E.U. The GDPR strengthens individual privacy rights and enhances data protection obligations for processors and controllers of personal data. This includes expanded disclosures about how personal information is to be used, limitations on retention of information and mandatory data breach notification requirements. Noncompliance with the GDPR can trigger significant fines. Following GDPR enactment, other countries have also implemented similar privacy laws.

Also, U.S. federal, state and other foreign governments and agencies have adopted or are considering adopting laws and regulations regarding the collection, storage, use, processing and disclosure of personal data. State governments within the U.S. are starting to enact their own versions of "GDPR-like" privacy legislation, which will create additional compliance challenges, risk, and administrative burden, such as the California Consumer Privacy Act ("CCPA"); the Virginia Consumer Data Protection Act; the Connecticut Data Privacy Act; the Utah Consumer Privacy Act and the Colorado Privacy Act. In addition, California voters passed by ballot initiative the California Privacy Rights Act in November 2020, which expands the CCPA. Comprehensive U.S. federal privacy legislation is also being discussed seriously by lawmakers, and the Federal Trade Commission has commenced a privacy rulemaking. It is possible that a one-size fits all compliance program may be difficult to achieve and manage globally, and that we will be forced to comply with a patchwork of inconsistent privacy regulations.

Because the interpretation and application of privacy and data protection laws are complex and still uncertain, it is possible that these laws may be interpreted and applied in a manner that is inconsistent with our existing practices or the features of our products, software and services. There is continued uncertainty concerning rules related to transfers of EU and United Kingdom ("UK") personal data outside of their respective jurisdictions. Cloud-based solutions may be subject to further regulation, including data localization requirements and restrictions concerning international transfer of data, the operational and cost impact of which cannot be fully known at this time.

Any failure or perceived failure by us, our business partners, or third-party service providers to comply with privacy and security-related data protection laws, regulations and standards, or the privacy commitments in contracts could result in proceedings against us by governmental entities or others and significant fines, which could have a material adverse effect on our business and operating results and harm our reputation.

Existing or future legislation and regulations pertaining to AI, AI-enabled products and the use of biometrics (e.g., facial recognition) or other video analytics that apply to us or to our customers may make it more challenging, costly, or in some cases prohibit certain products or services from being offered or modified and subject us to regulatory and litigation risks and potential liabilities, which could adversely affect our business and results of operations. We could suffer reputational or competitive damage from negative publicity related to products and services that utilize AI or other regulated analytics, which could also adversely affect our business and results of operations.

Current or future privacy-related legislation and governmental regulations pertaining to AI, AI-enabled products and the use of biometrics or other video analytics may affect how our business is conducted or expose us to unfavorable developments resulting from changes in the regulatory landscape. For example, laws such as the Biometric Information Privacy Act in Illinois have restricted the collection, use and storage of biometric information and provide a private right of action of persons who are aggrieved by violations of the act. Such legislation and regulations have exposed us to, and we expect that they will continue to expose us to, regulatory and litigation risks. Legislation and governmental regulations related to AI and the use of biometrics and other video analytics may also influence our current and prospective customers' activities, as well as their expectations and needs in relation to our products and services. Compliance with these laws and regulations may be onerous and expensive, and may be inconsistent from jurisdiction to jurisdiction, further increasing the cost of compliance and the risk of liability. It is also not clear how existing and future laws and regulations governing issues such as AI, AI-enabled products, biometrics and other video analytics apply or will be enforced with respect to the products and services we sell. Any such increase in costs or increased risk of liability as a result of changes in these laws and regulations or in their interpretation could individually or in the aggregate make our products and services that use AI technologies, biometrics or other video analytics less attractive to our customers, cause us to change or limit our business practices or affect our financial condition and operating results.

We are increasingly building AI into many of our offerings. We envision a future in which AI operating in our products and services will help our public safety and private sector customers build safer communities with stronger communication platforms. AI may be flawed and datasets may be insufficient or contain biased information. Additionally, AI presents emerging ethical issues and we may enable or offer solutions that draw controversy due to their perceived or actual impact on society. As we work to responsibly meet our customers' needs for products and services that use AI, we could suffer reputational or competitive damage as a result of any inconsistencies in the application of the technology or ethical concerns both of which may generate negative publicity.

Government regulation of radio frequencies may limit the growth of private and public safety narrowband and broadband systems or reduce barriers to entry for new competitors.

Radio spectrum is required to provide wireless voice, data, and video communications service. The allocation of frequencies is regulated in the U.S. and other countries and limited spectrum is allocated to wireless services, including commercial and public safety users. The global demand for wireless communications has grown exponentially, and spurred competition for access among various networks and users. In response, regulators are reassessing the allocations of spectrum among users, including public safety users, and considering whether to change the allocation of certain bands from narrowband to broadband use, or to require sharing of spectrum bands. Our results could be positively or negatively affected by the rules and regulations adopted by regulators. Our products operate both on licensed and unlicensed spectrum. The availability of additional radio spectrum may provide new business opportunities. Conversely, the loss of available radio spectrum may result in the loss of business opportunities. Regulatory changes in current spectrum bands (e.g., the sharing of previously dedicated or other spectrum) may also provide opportunities or may require modifications to some of our products so they can continue to be manufactured and marketed.

A portion of our business is dependent upon U.S. government contracts and grants, which are highly regulated and subject to disclosure obligations and oversight audits by U.S. government representatives and subject to cancellations. Any such disclosure events, audits or noncompliance with such regulations and laws could result in adverse findings and negatively impact our business.

Our business with or funded by the U.S. government is subject to specific laws and regulations with numerous and unique compliance requirements relating to formation, administration and performance of U.S. federal or federally funded contracts. These requirements, which may increase or change over time, may increase our performance and compliance costs thereby reducing our margins, which could have an adverse effect on our financial condition. Violations or other failures to comply with these laws, regulations or other compliance requirements could lead to terminations for default, suspension or debarment from U.S. government contracting or subcontracting for a period of time or other adverse actions. Such laws, regulations or other compliance requirements include those related to procurement integrity, export control, U.S. government security and information security regulations, supply chain and sourcing requirements and restrictions, employment practices, protection of criminal justice data, protection of the environment, accuracy of records, proper recording of costs, foreign corruption, Trade Agreements Act, Buy America Act, other domestic content requirements, and the False Claims Act.

Generally, in the U.S., government contracts and grants are subject to certain voluntary or mandatory disclosure obligations and oversight audits by government representatives. Such disclosures or audits could result in adjustments to our contracts. For contracts covered by the Cost Accounting Standards, any costs found to be improperly allocated to a specific contract may not be allowed, and such costs already reimbursed may have to be refunded. Future disclosures, audits and adjustments, if required, may materially reduce our revenues or profits upon completion and final negotiation of such disclosure events or audits. Negative disclosure or audit findings could also result in investigations, termination of a contract or grant, forfeiture of profits or reimbursements, suspension of payments, fines and suspension or prohibition from doing business with the U.S. government. All contracts with the U.S. government can be terminated for convenience by the government at any time.

Certain of our offerings include services that are subject to telecommunications regulations in various jurisdictions, which expose us to increased costs to address compliance obligations and potential liability in the event of any actual or perceived failure to comply with such regulations, which could adversely affect our business, results of operations and financial condition.

We are a provider of certain services that include telecommunications in the U.S., including selective routing services for 911 calls. As such, we are subject to certain existing or potential Federal Communications Commission ("FCC") and state regulations relating to telecommunications, including some certification or licensing, service reliability, and regulatory fee requirements. If we do not comply with FCC and state rules and regulations, we could be subject to enforcement actions, fines, loss of certifications or licenses, and possibly restrictions on our ability to operate or offer certain of our services. Any enforcement action, which may be a public process, could damage our reputation, erode customer trust, subject us to substantial fines and penalties, or cause us to restructure our service offerings, which could adversely affect our business, results of operations and financial condition.

Additionally, we are subject to regulations in certain foreign countries where we offer services that include telecommunications or other types of communications services. For example, we are registered to provide WAVE PTX push-to-talk offerings, with and without telecommunications connectivity, in certain countries in the EU. Local laws and regulations, and the interpretation of such laws and regulations, can differ significantly among the jurisdictions in which we provide these services. In some countries, certain services that we offer are not considered to be regulated communications or telecommunications services, while in other countries they are subject to regulations, including registration with the local telecommunications governing authority, which increases the level of scrutiny and potential for enforcement by regulators as well as our cost of doing business internationally. Further, enforcement and interpretations of the laws and regulations in some countries can be unpredictable and subject to the informal views of government officials. Failure to comply with these regulations could subject us to additional compliance obligations or liabilities, which could adversely affect our business, results of operations and financial condition.

Moreover, it is possible that regulations in any of these jurisdictions may be changed, expanded or interpreted and applied in a manner that is inconsistent with our existing practices. Future applicable legislative, regulatory or judicial actions could increase the cost and complexity of our compliance and increase our exposure to potential liability.

Increased focus on climate change has contributed to an evolving state of environmental regulation and uncertainty related to such regulation, as well as physical risks of climate change, could impact our results of operations, financial or competitive position.

Increased public awareness and worldwide focus on climate change has led to legislative and regulatory efforts to limit greenhouse gas emissions, and may result in more international, federal or regional requirements or industry standards to reduce or mitigate global warming. There continues to be a lack of consistent climate legislation, which creates economic and regulatory uncertainty. Additionally, legislative and regulatory efforts have focused on carbon taxes in certain areas where we operate. As a result, we may become subject to new or strengthened regulations, legislation or other governmental requirements or industry standards, and we anticipate that we will see increased demand to meet voluntary criteria related to reduction or elimination of certain constituents from products and increasing energy efficiency. For example, the EU's Corporate Sustainability Reporting Directive, Corporate Sustainability Due Diligence Directive and EU taxonomy initiatives will introduce additional due diligence and disclosure requirements addressing sustainability that we expect will apply to us in the coming years. These requirements and other increased regulation of climate change concerns could subject us to additional costs and restrictions and require us to make certain changes to our manufacturing practices and/or product designs, which could negatively impact our business, results of operations, financial condition and competitive position.

In addition, the physical risks of climate change (such as extreme weather conditions or rising sea levels) may impact the availability and cost of materials and natural resources, sources and supply of energy, product demand and manufacturing and could increase insurance and other operating costs. This may include, potentially, costs associated with repairing damage as a result of extreme weather events or renovating or retrofitting facilities to better withstand extreme events. Many of our facilities around the world, as well as our customers' and suppliers' operations, are in locations that may be impacted by the physical risks of climate change, and we face the risk of losses incurred as a result of physical damage to our facilities or those of our suppliers or customers such as loss or spoilage of inventory and business interruption caused by such events.

We are subject to a wide range of product regulatory and safety, consumer, worker safety and environmental product compliance and remediation laws that continue to expand and could impact our ability to grow our business, could subject us to unexpected costs and liabilities and could impact our financial performance.

Our operations and the products we manufacture are subject to a wide range of product regulatory and safety, consumer, worker safety and environmental product compliance and remediation laws. Compliance with such existing or future laws could subject us to future costs or liabilities, impact our production capabilities, constrict our ability to sell, expand or acquire facilities, restrict what products and services we can offer, and generally impact our financial performance. Some of these laws are environmental and relate to the use, disposal, cleanup of, and exposure to certain substances. For example, in the U.S., laws often require parties to fund remedial studies or actions regardless of fault and oftentimes in response to action or omissions that were legal at the time they occurred. We continue to incur disposal costs and have ongoing remediation obligations. Changes to environmental laws or our discovery of additional obligations under these laws could have a negative impact on our financial performance.

Laws focused on: (i) the energy efficiency of electronic products and accessories, (ii) recycling of both electronic products and packaging, (iii) reducing or eliminating certain hazardous substances in electronic products, (iv) the use and transportation of batteries, and (v) debt collection and other consumer finance matters continue to expand significantly. Laws pertaining to accessibility features of electronic products, standardization of connectors and power supplies, the use and transportation of lithium-ion batteries and other aspects of our products are also proliferating. There are also demanding and rapidly changing laws around the globe related to issues such as product safety, radio interference, radio frequency radiation exposure, medical related functionality, use of products with video functionality, and consumer and social mandates pertaining to use of wireless or electronic equipment. These laws, and changes to these laws, could have a substantial impact on whether we can offer certain products, solutions and services, on product costs, and on what capabilities and characteristics our products or services can or must include, which could negatively impact our business, results of operations, financial condition and competitive position.

Tax matters could have a negative impact on our financial condition and results of operations.

We are subject to income taxes in the U.S. and numerous foreign tax jurisdictions. Our provision for income taxes and cash tax liability may be negatively impacted by: (i) changes in the mix of earnings taxable in jurisdictions with different statutory tax rates, (ii) changes in tax laws and accounting principles, (iii) changes in the valuation of our deferred tax assets and liabilities, (iv) changes in available tax credits, (v) discovery of new information during the course of tax return preparation, (vi) increases in non-deductible expenses, or (vii) repatriating cash held abroad.

The Tax Cuts and Jobs Act of 2017 requires that we capitalize and amortize our research and experimental expenditures over five or fifteen years, as applicable, beginning with our tax year 2022. This change in law had a materially negative impact on our cash tax liability in 2022, and we expect such change to continue to impact our cash tax liability through 2026, unless the provisions are repealed or deferred by Congress.

Tax audits may also negatively impact our business, financial condition and results of operations. We are subject to continued examination of our income tax returns, and tax authorities may disagree with our tax positions and assess additional tax. We regularly evaluate the likelihood of adverse outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. Outcomes from these continuing examinations may have a negative impact on our future financial condition and operating results.

Certain tax policy efforts, including the Organization for Economic Co-operation and Development's Base Erosion and Profit Shifting Project, the European Commission's state aid investigations, and other initiatives could have an adverse effect on the taxation of international businesses. Furthermore, many of the countries where we are subject to taxes, including the U.S., are independently evaluating their tax policy and we may see significant changes in legislation and regulations concerning taxation. Certain countries have already enacted legislation which could affect international businesses, and other countries have become more aggressive in their approach to audits and enforcement of their applicable tax laws. Such changes, to the extent they are brought into tax legislation, regulations, policies, or practices, could increase our effective tax rates in many of the countries where we have operations and have an adverse effect on our overall tax rate, along with increasing the complexity, burden and cost of tax compliance, all of which could impact our operating results, cash flows and financial condition.

Risks Related to Our Ability to Grow Our Business

Catastrophic events, including the continuing COVID-19 pandemic, natural disasters and other events beyond our control may interrupt our business, or our customers' or suppliers' business, which may adversely affect our business, results of operations, financial position, cash flows and stock price.

Our business operations, and the operations of our customers and suppliers, are subject to interruption by natural disasters (including climate change-related events), flooding, fire, power shortages, the widespread outbreak of infectious diseases and pandemics, such as the continuing COVID-19 pandemic, terrorist acts or the outbreak or escalation of armed hostilities (including the military action against Ukraine launched by Russia and any related political or economic responses), and other events beyond our control. Any of these events could impair our ability to manage our business and/or cause disruption of economic activity, which could have an adverse effect on our business, results of operations, financial position, cash flows and stock price.

In particular, the continuing COVID-19 pandemic, including the emergence of variants, has had, and could continue to have, an adverse effect on our business, financial position, cash flows and stock price in many ways, including, but not limited to, the following:

- The COVID-19 pandemic and responses to it have significantly impacted the movement of goods and services worldwide, which has resulted in and which we expect to continue to result in disruptions in our supply chain, particularly with respect to difficulties and delays in procuring semiconductor components and disruptions to transportation.
- Our workforce may be unable to work on-site or travel as a result of event cancellations, facility closures, travel and other restrictions and changes in industry practice, or if they, their co-workers or their family members become ill or otherwise require care arrangements. These workforce disruptions have adversely affected and could continue to adversely affect, our ability to operate, including to develop, manufacture, generate sales of, promote, market and deliver our products, solutions and services, and provide customer support.
- We outsource certain business activities to third-parties. If one or more of the third-parties to whom we outsource certain business activities experience operational failures or business disruption as a result of the impacts from COVID-19, or claim that they cannot perform, it may have negative effects on our business and financial condition.

As we expand the technologies within our Products and Systems Integration and Software and Services segments, we may be subject to additional compliance obligations and face increased competition and increased areas of risk that we may not be able to properly assess or mitigate, which could harm our market share, results of operations and financial condition or result in additional liabilities for our business.

The process of developing new video security, access control, and software products and enhancing existing products is complex, costly and uncertain, and any failure by us to anticipate customers' changing needs, emerging technological trends and development costs accurately could significantly harm our market share, results of operations and financial condition. Any failure to accurately predict technological and business trends, control research and development costs or execute our innovation strategy could harm our business and financial performance. Our research and development initiatives may not be successful in whole or in part, including research and development projects, which we have prioritized with respect to funding and/or personnel.

We may face increasing competition from traditional system integrators, the defense industry, commercial software companies, and commercial telecommunication carriers as services contracts become larger and more complicated. Expansion will bring us into contact with new regulatory requirements and restrictions, such as data security or data residency/localization obligations, with which we will have to comply and may increase the costs of doing business, reduce margins and delay or limit the range of new solutions and services which we will be able to offer. We may be required to agree to specific performance metrics that meet the customer's requirements for network security, availability, reliability, maintenance and support and, in some cases, if these performance metrics are not met we may not be paid.

Additionally, our expanding portfolio of products may be subject to new regulatory and statutory requirements that could result in additional compliance obligations and liabilities for our business.

Our success depends in part on our timely introduction of new products and technologies and our results can be impacted by the effectiveness of our significant investments in new products and technologies.

The markets for certain products of ours are characterized by changing technologies and evolving industry standards and customer preferences. For example, the software industry is characterized by rapidly changing customer preferences in favor of digital capabilities, including public and private cloud solutions. In some cases, it is unclear what specific technology will be adopted in the market or what delivery model will prevail. In addition, new technologies such as voice over LTE and 5G or push-to-talk clients over LTE and 5G could reduce sales of our traditional products. The shift to smart public safety and the prevalence of data in our customer use cases results in our competing in a more fragmented marketplace. In addition, new technologies and new competitors continue to enter our markets at a faster pace than we have experienced in the past, resulting in increased competition from non-traditional suppliers, including public carriers, telecom equipment providers, consumer device manufacturers and software and video security companies. New products and services are expensive to develop and bring to market and additional complexities are added when this process is outsourced as we have done in certain cases or as we increase our reliance on third-party content and technology. Moreover, evolving expectations from customers, including the expectations that companies offer products and services to help reduce energy consumption, improve efficiency and minimize greenhouse gas footprints, may impact our competitive position and research and development efforts. Our success depends, in substantial part, on the timely and successful introduction of new products and services, upgrades and enhancements of current products to comply with emerging industry standards, customer expectations, laws and regulations, including country specific proprietary technology requirements, and to address competing technological and product developments carried out by our competitors. Developing new technologies to compete in a specific market may not be financially viable, resulting in our inability to compete in that market. The research and development of new, technologically-advanced products and services is a complex and uncertain process requiring high levels of innovation and investment, as well as the accurate anticipation of technology and market trends. Many of our products and services are complex and we may experience delays in completing development and introducing new products or technologies in the future. We may focus our resources on technologies that do not become widely accepted or are not commercially viable or involve compliance obligations with additional areas of regulatory requirements.

We expect to continue to make strategic acquisitions of other companies or businesses and these acquisitions introduce significant risks and uncertainties, including risks related to integrating the acquired businesses and achieving benefits from the acquisitions.

In order to position ourselves to take advantage of growth opportunities or to meet other strategic needs such as product or technology gaps, we have made, and expect to continue to make, strategic acquisitions that involve significant risks and uncertainties. These risks and uncertainties include: (i) the inability to realize our business plan with respect to the acquired businesses, (ii) the difficulty or inability in integrating newly-acquired businesses and operations in an efficient and effective manner, including ensuring proper integration of acquired businesses' legal and regulatory compliance programs, information technology systems and financial reporting and internal control systems, (iii) the challenges in integrating acquired businesses to create the operating platform for public safety, (iv) the challenges in achieving strategic objectives, cost savings and other benefits from acquisitions, (v) the risk that our contractual relationships or the markets served do not evolve as anticipated and that the technologies acquired do not prove to be those needed to be successful in those markets, (vi) the potential loss of key employees of the acquired businesses, (vii) the risk of diverting the attention of senior management from our operations, (viii) the risks of entering new markets in which we have limited experience, (ix) future impairments of goodwill, and (x) the potential loss of intellectual property due to actions of employees in connection with such acquisitions. In particular, failure to achieve targeted cost and revenue synergies could negatively impact our business performance.

Certain acquisition candidates in the industries in which we participate may carry higher relative valuations (based on revenues, earnings, cash flow, or other relevant multiples) than we do. This is particularly evident in recurring revenue businesses, software businesses and certain services businesses. Acquiring a business that has a higher relative valuation than Motorola Solutions may be dilutive to our earnings. In addition, we may not pursue opportunities that are highly dilutive to near-term earnings.

Key employees of acquired businesses may receive substantial value in connection with a transaction in the form of cash payments for their ownership interest, particularly in the case of founders and other shareholder employees, or as a result of change-in-control agreements, acceleration of stock options and the lifting of restrictions on other equity-based compensation rights. To retain such employees and integrate the acquired business, we may offer additional retention incentives, but it may still be difficult to retain certain key employees.

Risks Related to Information Technology and Intellectual Property

Increased cybersecurity threats could lead to a security breach or other significant disruption of our IT systems, those of our outsource partners, suppliers or those we manufacture, install, and in some cases operate and maintain for our customers, and could have a negative impact on our operations, sales, and operating results.

We rely extensively on our information systems to manage our business operations. We are consistently subject to attempts to compromise our information technology systems from both internal and external sources and, like all information technology systems, our systems are potentially vulnerable to damage, unauthorized access or interruption from a variety of sources, including but not limited to, cyberattack, cyber intrusion, computer viruses, security breach, denial-of-service attacks, ransomware or other malware, energy blackouts, natural disasters and severe weather conditions, terrorism, sabotage, war, insider trading, human error and computer and telecommunication failures. As a provider of mission-critical communications systems for customers in critical infrastructure sectors of the U.S. and globally, including systems that we operate and maintain for certain customers of ours or as a software-based service, we face additional risk as a target of sophisticated attacks aimed at compromising both our company's and our customers' sensitive information and intellectual property. This risk is heightened because these systems may contain sensitive governmental information or personally identifiable or other protected information. Our vulnerability to cyber and other information technology risks may also be increased by factors such as the Russia-Ukraine conflict and resulting geopolitical conflict, as well as COVID-19, which has contributed to a large portion of our office workers continuing to work from home. Additionally, the sophistication of these threats continues to grow and the complexity and scale of the systems to be protected continues to increase. Like other enterprise software companies, we also use open source software from time to time, which may be more susceptible to vulnerabilities that may not be identified with scanning tools. In an effort to protect against such attacks, we maintain insurance related to cybersecurity risks and employ a number of countermeasures and security controls, including training, audits, encryption, and utilization of commercial information security threat sharing networks. Specifically, regarding vulnerabilities, we patch systems where patches are available to deploy, and have technologies and services that help us to detect exploits of vulnerabilities and proactively block the exploit when it happens. If we fail to effectively manage our investment in cybersecurity, our business, products, and services could suffer from the resulting weaknesses in our infrastructure, systems or controls.

Further, our company outsources certain business operations, including, but not limited to IT, network connectivity, HR information systems, manufacturing, repair, distribution and engineering services. We are dependent, in certain instances, upon our outsourced business partners, suppliers, and customers to adequately protect our IT systems and those IT systems that we manage for our customers, including the hosts of our cloud infrastructure on top of which our cloud-based solutions are built, as well as the network connectivity upon which some of our services are built. Some of our customers are exploring broadband solutions that use public carrier networks on which our solutions would operate. We do not have direct oversight or influence over how public carrier networks manage the security, quality, or resiliency of their networks, and because they are an attractive high value target due to their role in critical infrastructure, they expose customers to an elevated risk over our private networks. In addition, we maintain certain networked equipment at customer locations and are reliant on those customers to protect and maintain that equipment.

A cyberattack or other significant disruption involving our IT systems or those of our outsource partners, suppliers or our customers could result in substantial costs to repair or replace our IT systems or the loss of critical data and interruptions or delays in our ability to perform critical functions. Such disruption may also result in the unauthorized release of proprietary, confidential or sensitive information of us or our customers, or the disruption of services provided to customers and essential for their mission. Such unauthorized access to, or release of, information or disruption of services could: (i) allow others to unfairly compete with us, (ii) compromise safety or security, given the mission-critical nature of our customers' systems, (iii) subject us to claims for breach of contract, tort, and other civil claims without adequate indemnification from our suppliers, (iv) subject us to time-intensive notification requirements, and (v) damage our reputation. Our potential liability related to such claims by customers or third-parties described above may not be contractually capped nor fully covered by our insurance. We could face regulatory penalties, enforcement actions, remediation obligations and/or private litigation by parties whose data is improperly disclosed or misused. Any or all of the foregoing could have a negative impact on our business, financial condition, results of operations, and cash flow.

If we are unable to adequately protect our intellectual property, or if we, our customers and/or our suppliers are found to have infringed intellectual property rights of third parties, our competitive position and results of operations may be adversely impacted.

Our intellectual property rights protect our innovations and technology, and they may also generate income under license agreements. We attempt to protect our proprietary technology with intellectual property in the form of patents, copyrights, trademarks, trade secret laws, confidentiality agreements and other methods. We also generally restrict access to and distribution of our proprietary information. Despite these precautions, it may be possible for a third-party to obtain and use our proprietary information or develop similar technology independently. As we expand our business, including through acquisitions, and compete with new competitors in new markets, the breadth and strength of our intellectual property portfolio in those new markets may not be as developed as in our longer-standing businesses. This may expose us to a heightened risk of litigation and other challenges from competitors in these new markets. In addition, effective patent, copyright, trademark and trade secret protection may be unavailable or limited in certain foreign countries. Unauthorized use of our intellectual property rights by third-parties and the cost of any litigation necessary to enforce our intellectual property rights could have a negative impact on our financial results and competitive position. Moreover, the validity and scope of coverage of our patents cannot be fully determined prior to litigation.

Additionally, because our products are comprised of complex technology, we are often involved in or impacted by assertions, including both requests for licenses and litigation, regarding third-party patents and other intellectual property rights. The development of products operable in accordance with industry standards, such as those related to 5G or video technology, may result in third-party patent royalty demands. Third-parties have asserted, and in the future may assert, intellectual property infringement claims against us and against our customers and suppliers. Many of these assertions are brought by non-practicing entities whose principal business model is to secure patent licensing-based revenue from product manufacturing companies. The patent holders often make broad and sweeping claims regarding the applicability of their patents to our products and services, seeking a percentage of sales as licenses fees, seeking injunctions to pressure us into taking a license, or a combination thereof. Defending claims may be expensive and divert the time and efforts of our management and employees. Third-parties may also seek broad injunctive relief, which could limit our ability to sell our products in the U.S. or elsewhere with intellectual property subject to the claims. If we do not succeed in any such litigation, we could be required to expend significant resources to pay damages, develop non-infringing products or to obtain licenses to the intellectual property that is the subject of such litigation, each of which could have a negative impact on our financial results. Such licenses, if available at all, may not be available to us on commercially reasonable terms. In some cases, we might be forced to stop delivering certain products if we or our customer or supplier are subject to a final injunction.

We face risks relating to intellectual property licenses and intellectual property indemnities in our customer and supplier contracts, which may fail to fully protect us and subject us to unexpected liabilities or harm our financial condition and results of operations.

We obtain some technology from suppliers through the purchase of components or licensing of software, and we attempt to negotiate favorable intellectual property indemnities with our suppliers for infringement of third-party intellectual property rights. With respect to such indemnities, we may not be successful in our negotiations, a supplier's indemnity may not fully protect us or cover all damages and losses suffered by us and our customers due to the infringing products, or a supplier may not choose to obtain a third-party license or modify or replace its products with non-infringing products which would otherwise mitigate such damages and losses. Such situations may subject us to unexpected liabilities or unfavorable conditions. Further, we may not be able to participate in intellectual property litigation involving a supplier and may not be able to influence any ultimate resolution or outcome that may negatively impact our sales or operations if a court enters an injunction that enjoins the supplier's products or if the International Trade Commission issues an exclusionary order that blocks importation of our products into the U.S. Intellectual property disputes involving our suppliers have resulted in our involvement in International Trade Commission proceedings from time to time. These proceedings are costly and entail the risk that we will be subjected to a ban on the importation of our products into the U.S. solely as a result of our use of a supplier's components.

In addition, our customers increasingly demand that we indemnify them broadly from all damages and losses resulting from intellectual property litigation against them. These demands may stem from non-practicing entities that engage in patent enforcement and litigation, sometimes seeking royalties and litigation judgments in proportion to the value of the use of our products, rather than in proportion to the cost of our products. Such demands can amount to many times the selling price of our products.

Further, competitors may be able to negotiate significantly more favorable terms for intellectual property than we are able to, which puts them at a competitive advantage. Moreover, with respect to our internally developed proprietary software, we may be harmed if we are forced to make publicly available, under the relevant open-source licenses, some of that proprietary software as a result of either our use of open-source software code or the use of third-party software that contains open-source code.

We no longer own certain logos and other trademarks, trade names and service marks, including MOTOROLA, MOTO, MOTOROLA SOLUTIONS and the Stylized M logo and all derivatives and formatives thereof ("Motorola Marks") and we license the Motorola Marks from Motorola Trademark Holdings, LLC ("MTH"), which is currently owned by Motorola Mobility, a subsidiary of Lenovo. Our joint use of the Motorola Marks could result in product and market confusion and negatively impact our ability to expand business under the Motorola brand. In addition, if we do not comply with the terms of the license agreement we could lose our rights to the Motorola Marks.

In 2010, we secured a worldwide, perpetual and royalty-free license from MTH to use the Motorola Marks as part of our corporate name and in connection with the manufacture, sale, and marketing of our current products and services. The license of the Motorola Marks is important to us because of the reputation of the Motorola brand for our products and services. There are risks associated with both Motorola Mobility and us using the Motorola Marks and our loss of ownership of the Motorola Marks. As both we and Motorola Mobility use the Motorola Marks, confusion could arise in the market, including customer confusion regarding the products offered by and the actions of the two companies. Also, any negative publicity associated with either company in the future could adversely affect the public image of the other.

Motorola Mobility was acquired by Lenovo in 2014, which resulted in Lenovo having effective control over the Motorola Marks. Our risks under the license could increase if Lenovo expands its use of the Motorola Marks, or if our products and those of Lenovo converge. In addition, because our license of the Motorola Marks is limited to products and services within our specified fields of use, we are not permitted to use the Motorola Marks in other fields of use without the approval of Motorola Mobility. As we continue to expand our business into any other fields of use, we either must do so with a brand other than the Motorola brand, which could take considerable time and expense, or assume the risk that our expanded fields don't meet the definition of permitted fields of use under our license, which could result in loss of our rights to use the Motorola Marks.

We could lose our rights to use the Motorola Marks if we do not comply with the terms of the license agreement. Such a loss could negatively affect our business, results of operations and financial condition. Furthermore, MTH has certain rights to license the brand to third-parties and either Motorola Mobility or licensed third-parties may use the brand in ways that make the brand less attractive for customers of Motorola Solutions, creating increased risk that Motorola Solutions may need to develop an alternate or additional brand. Motorola Mobility may require us to adopt modifications to the Motorola Marks, and this could negatively impact our business, including costs associated with rebranding.

Neither Motorola Mobility nor Lenovo are prohibited from selling the Motorola Marks. In the event of a liquidation by Lenovo or the then-owner of the Motorola Marks, it is possible that a bankruptcy court would either (i) permit the Motorola Marks to be assigned to a third-party whose interests may be incompatible with ours, thereby potentially making the license arrangement difficult to administer and increasing the costs and risks of sharing the Motorola Marks, or (ii) refuse to uphold the license or certain of its terms, which could negatively affect our business, results of operations and financial condition.

Risks Related to the Operation of Our Business

Our future operating results depend on our ability to purchase at acceptable prices a sufficient amount of materials, parts, and components, as well as software and services, to meet the demands of our customers and any disruption to our suppliers or significant increase in the price of supplies has had, and could continue to have a negative impact on our results of operations or financial condition.

Our ability to meet customers' demands depends, in part, on our ability to timely obtain an adequate delivery of quality materials, parts, and components, as well as software and services, from our suppliers. If demand for our products or services increases from our current expectations or if, as we have experienced recently, suppliers are unable to meet our demand for other reasons, including as a result of supply chain constraints, natural disasters (including events related to climate change), financial issues or other factors, we have, and could continue to experience an interruption in supply or a significant increase in the price of supply. We have experienced such shortages in the past that have negatively impacted our results of operations and may continue to experience such shortages in the future. In 2022, our supply chain was impacted by global issues related to the effects of the COVID-19 pandemic, the Russia-Ukraine conflict and the inflationary cost environment, particularly with respect to materials in the semiconductor market, including part shortages, increased freight costs, diminished transportation capacity and labor constraints. This resulted in disruptions in our supply chain, as well as difficulties and delays in procuring certain semiconductor components. Cost increases were driven by elevated lead times and increased material costs, in particular the need to purchase semiconductor components from alternative sources, including brokers. We attempted, and continue to attempt, to mitigate such supply disruptions by focusing on improving our supplier network, engineering alternative designs and actively managing our inventory. We expect reduced supply of these materials in the semiconductor market and the related mitigation efforts described above to continue, which may impact our ability to meet customer demand and negatively impact our results of operations.

Our suppliers have, and may continue to significantly and quickly increase their prices in response to increases in costs of raw materials that they use to manufacture their parts or components. As a result, we may not be able to increase our prices commensurately with our increased costs, which could negatively impact our results of operations or financial condition. In addition, certain supplies, including for some of our critical components, software and services solutions, are available only from a single source or limited sources and we may not be able to diversify sources in a timely manner. Where certain supplies are not available from our direct suppliers, we may be required to move to an alternative source or source certain items through the open market, which involves significantly increased prices that are difficult to forecast or predict. We have been required to take these steps in certain instances in connection with the impact on the semiconductor market described above. Each of these factors may impact our ability to meet customer demand and could negatively impact our results of operations or financial condition.

We are exposed to risks under large, multi-year system and services contracts that may negatively impact our business.

We enter into large, multi-year system and services contracts with municipal, state, and nationwide government and commercial customers. In some cases, we may not be the prime contractor and may be dependent on other third-parties such as commercial carriers or systems integrators. Our entry into these contracts exposes us to risks, including among others: (i) technological risks, (ii) risk of defaults by third-parties on whom we are relying for products or services as part of our offering or who are the prime contractors, (iii) financial risks, including potential penalties applicable to us if performance commitments in managed services contracts are not met, the estimates inherent in projecting costs associated with such contracts, the fact that such contracts often only receive partial funding initially and may be cancellable on short notice with limited penalties, our inability to recover front-loaded capital expenditures in long-term managed services contracts, the impact of the termination of funding for a government program or the insolvency of a commercial customer, and the impact of currency fluctuations and inflation, (iv) cybersecurity risk, especially in managed services contracts with public safety and commercial customers that process data, and (v) political or regulatory risk, especially related to the contracts with government customers, including our Airwave and Emergency Services Network ("ESN") government contracts in the UK.

For example, with respect to financial risks of such contracts, in the third quarter of 2022, we realized a fixed asset impairment loss of $147 million related to our ESN service contract with the Home Office of the UK. Moreover, with respect to the political or regulatory risks of such contracts, in October 2021, the UK's Competition and Markets Authority (the "CMA") announced that it had opened a market investigation into the Mobile Radio Network for the Police and Emergency Services. This investigation affects Airwave, our private mobile radio communications network that we acquired in 2016. Airwave provides mission-critical voice and data communications to public emergency service agencies in Great Britain. In October 2022, the CMA published a provisional decision with its findings regarding competition and proposed remedies. We disagree with the CMA's provisional decision and will continue to work with the CMA to demonstrate the value of the Airwave network and protect Airwave's contractual position; however, the ultimate resolution of the CMA market investigation could result in additional compliance obligations for our Airwave business such as prospective price controls, enhanced information transparency or structural remedies.

Our employees, customers, suppliers and outsource partners are located throughout the world and, as a result, we face risks that other companies that are not global may not face.

Our customers and suppliers are located throughout the world. In 2022, 30% of our revenue was generated outside of North America. In addition, 47% of our employees were employed outside of North America in 2022. Most of our suppliers' operations are outside the U.S.

A significant amount of manufacturing and research and development of our products, as well as administrative and sales facilities, takes place outside of the U.S. If the operations in these facilities is disrupted, our business, financial condition, results of operation, and cash flows could be negatively impacted.

Because of these sizable sales and operations outside of the U.S., we have more complexity in our operations and are exposed to a unique set of global risks that could negatively impact our business, financial condition, results of operations, and cash flows, including but not limited to: (i) currency fluctuations, including but not limited to increased pressure to agree to established currency conversion rates and cost of living adjustments as a result of foreign currency fluctuations, (ii) import/export regulations, tariffs, trade barriers and trade disputes, customs classifications and certifications, including but not limited to changes in classifications or errors or omissions related to such classifications and certifications, (iii) compliance with and changes in U.S. and non-U.S. laws or regulations related to antitrust and competition (such as the CMA's ongoing market investigation into the Mobile Radio Network for the Police and Emergency Services), anti-corruption (such as the Foreign Corrupt Practices Act and the U.K. Bribery Act), trade, labor and employment, environmental, health and safety, technical standards, consumer protection, intellectual property and data privacy, (iv) tax issues, such as tax law changes, variations in tax laws from country to country and as compared to the U.S., obligations under tax incentive agreements, and difficulties in securing local country approvals for cash repatriations, (v) reduced financial flexibility given that a significant percentage of our cash and cash equivalents is currently held outside of the U.S., (vi) challenges in collecting accounts receivable, (vii) cultural and language differences, (viii) instability in economic or political conditions, including inflation, recession and actual or anticipated military or political conflicts (such as the Russia-Ukraine conflict) and terrorism, (ix) natural disasters, (x) public health issues or outbreaks or pandemics, such as the continuing COVID-19 pandemic, and (xi) litigation in foreign court systems and foreign enforcement or administrative proceedings.

Additionally, the benefits we receive under various agreements we have entered into with non-U.S. governments and agencies relate to our operations and/or sales in such foreign jurisdictions. If our operations or sales are not at levels originally anticipated, we may be at risk of having to reimburse benefits already granted, which could increase our cost of doing business in such foreign jurisdictions.

Over the last several years we have utilized third-parties to develop, design and/or manufacture many of our components and some of our products, and to perform portions of certain business operations such as IT, network connectivity, HR information systems, manufacturing, repair, distribution and engineering services. We expect to continue these practices in the future, which limit our control over these business operations and exposes us to additional risk as a result of the actions of our outsource partners.

We rely on third-parties to develop, design and/or manufacture many of our components and some of our products (including software), and to assist in performing certain IT, network connectivity, HR information systems, manufacturing, repair, distribution and engineering services. As we outsource more of such operations we are not able to directly control these activities. We could have difficulties fulfilling our orders and our sales and profits could decline if: (i) we are not able to engage such third-parties with the capabilities or capacities required by our business, (ii) such third-parties lack our desired level of performance or service, lack sufficient quality control or fail to deliver quality components, products, services or software on time and at reasonable prices, (iii) there are significant changes in the financial or business condition of such third-parties, (iv) our third-party providers fail to comply with legal or regulatory requirements (such as the Uyghur Forced Labor Protection Act), (v) we have difficulties transitioning operations to such third-parties, or (vi) such third-parties are disrupted by external events, such as natural disasters or other significant disruptions (including COVID-related impacts as described above, extreme weather conditions related to climate change, acts of terrorism or political conflicts (such as the Russia-Ukraine conflict), cyberattacks and labor disputes).

Our reliance on third-parties could, in certain instances, result in reputational damage or even disqualify us from sales opportunities with certain government customers. For example, our supply chain is complex and if our suppliers are unable to verify that components and parts provided to us are free of defined "conflict minerals" originating from the Democratic Republic of Congo ("DRC") or an adjoining country, then we may be required to publicly disclose, as we have disclosed in the past, that we are not currently able to determine if the products we manufactured are DRC conflict-free, which could harm our reputation.

Once a business activity is outsourced we may be contractually prohibited from or may not practically be able to bring such activity back within the Company or move it to another outsource partner. The actions of our outsource partners could result in reputational damage to us and could negatively impact our business, financial conditions, results of operations, and cash flows.

We utilize the services of subcontractors to perform under many of our contracts and the inability of our subcontractors to perform in a timely and compliant manner or to adhere to our Human Rights Policy could negatively impact our business.

We engage subcontractors, including third-party integrators, on many of our contracts and as we expand our solutions and services business, our use of subcontractors has and will continue to increase. Our subcontractors may further subcontract performance and may supply third-party products and software from a number of smaller companies. In addition, it is our policy to require our subcontractors and other third-parties with whom we work to operate in compliance with applicable laws, rules and regulations, including our Human Rights Policy (and, in addition, for our suppliers to comply with our Supplier Code of Conduct).

We may have disputes with our subcontractors, including disputes regarding the quality and timeliness of work performed by the subcontractor or its subcontractors and the functionality, warranty and indemnities of products, software and services supplied by our subcontractor. We are not always successful in passing down customer requirements to our subcontractors or a customer may otherwise look to us to cover a loss or damage, and thus in some cases may be required to absorb contractual risks from our customers without corresponding back-to-back coverage from our subcontractor. Our subcontractors may not be able to acquire or maintain the quality of the materials, components, subsystems and services they supply, or secure preferred warranty and indemnity coverage from their suppliers which might result in greater product returns, service problems, warranty claims and costs and regulatory compliance issues. Further, one of our subcontractors or other third-parties subject to our Human Rights Policy could fail to comply with such policies or with applicable law or may engage in unethical business practices. Any of the foregoing could cause orders to be canceled, relationships to be terminated or our reputation to be damaged, which could harm our business, financial condition and results of operations.

If the quality of our products does not meet our customers' expectations or regulatory or industry standards, then our sales and operating earnings, and ultimately our reputation, could be negatively impacted.

Some of the products we sell may have quality issues resulting from the design or manufacture of the product, or from the software used in the product. Sometimes, these issues may be caused by components we purchase from other manufacturers or suppliers. Often these issues are identified prior to the shipment of the products and may cause delays in shipping products to customers, or even the cancellation of orders by customers. Sometimes, we discover quality issues in the products after they have been shipped to our customers, requiring us to resolve such issues in a timely manner that is the least disruptive to our customers, particularly in light of the mission-critical nature of our communications products. Such pre-shipment and post-shipment quality issues can have legal, financial and reputational ramifications, including: (i) delays in the recognition of revenue, loss of revenue or future orders, (ii) customer-imposed penalties for failure to meet contractual requirements, (iii) increased costs associated with repairing or replacing products, and (iv) a negative impact on our goodwill and brand name reputation. In some cases, if the quality issue affects the product's performance, safety or regulatory compliance, then such a “defective” product may need to be “stop-shipped” or recalled. Depending on the nature of the quality issue and the number of products in the field, it could cause us to incur substantial recall or corrective field action costs, in addition to the costs associated with the potential loss of future orders and the damage to our goodwill or brand reputation. In addition, we may be required, under certain customer contracts, to pay damages for failed performance that might exceed the revenue that we receive from the contracts. Recalls and field actions involving regulatory non-compliance could also result in fines and additional costs. Recalls and field actions could result in third-party litigation by persons or companies alleging harm or economic damage as a result of the use of the products.

In addition, privacy advocacy groups and other technology and industry groups have established or may establish various new or different self-regulatory standards that may place additional obligations on us. Our customers may expect us to meet voluntary certifications or adhere to other standards established by third-parties. If we are unable to maintain these certifications or meet these standards, it could reduce demand for our products and adversely affect our business.

Increasing scrutiny and evolving expectations from investors, customers, lawmakers, regulators and other stakeholders regarding environmental, social and governance (“ESG”)-related practices and disclosures may adversely affect our reputation, adversely impact our ability to attract and retain employees or customers, expose us to increased scrutiny from the investment community or enforcement authorities or otherwise adversely impact our business and results of operations.

There is increasing scrutiny and evolving expectations from investors, customers, lawmakers, regulators and other stakeholders on ESG-related practices and disclosures, including those related to environmental stewardship, climate change, diversity, equity and inclusion, forced labor, racial justice and workplace conduct. Regulators have imposed, and likely will continue to impose, ESG-related rules and guidance, which may conflict with one another and impose additional costs on us or expose us to new or additional risks. Moreover, certain organizations that provide information to investors have developed ratings for evaluating companies on their approach to different ESG-related matters, and unfavorable ratings of us or our industries may lead to negative investor sentiment and the diversion of investment to other companies or industries. We have elected to share publicly our ongoing ESG-related efforts in our proxy statement, Corporate Responsibility Report, TCFD Report, and on our corporate website. Our business may face increased scrutiny related to these activities, and our failure or perceived failure to meet ESG-related goals or maintain ESG practices that meet evolving stakeholder expectations, could harm our reputation, adversely impact our ability to attract and retain employees or customers, expose us to increased scrutiny from the investment community or enforcement authorities or otherwise adversely affect our business and results of operations.

Risks Related to Human Capital Management

Our success depends in part upon our ability to attract and retain senior management and key employees, including engineers and other key technical employees, in order to remain competitive.

The performance of our CEO, senior management and other key employees such as engineers and other key technical employees is critical to our success. If we are unable to retain talented, highly-qualified senior management, engineers and other key employees or attract them when needed, it could negatively impact our business.

We rely on the experience of our senior management, most of whom have been with us for many years and as a result have specific knowledge relating to us and our industry that is difficult to replace and competition for management with experience in the communications industry is intense. A loss of the CEO, a member of senior management, or an engineer or other key employee particularly to a competitor, could also place us at a competitive disadvantage. In addition, we face increased demands for technical personnel in areas such as software development, which is an area of particularly high demand for skilled employees. We believe that our future success depends in large part on our continued ability to hire, assimilate, retain and leverage the skills of qualified engineers and other highly-skilled personnel needed to develop successful new products or services. In particular, we have faced, and expect to continue to face, intense competition globally for experienced software and cloud computing infrastructure engineers, as well as employees in data science and AI. The compensation and incentives we have available to attract, retain and motivate employees may not meet the expectations of current and prospective employees as the competition for talent intensifies. Our efforts to attract, develop, integrate, and retain highly skilled employees with appropriate qualifications may be compounded by the continuing effect of the COVID-19 pandemic, immigration, or the availability of work visas. Further, if we fail to adequately plan for the succession of our CEO, senior management and other key employees, our business could be negatively impacted.

Risks Related to Financial Performance or Economic Conditions

As we are a global company, we face a number of risks related to current global economic and political conditions in the markets in which we operate that have and could continue to unfavorably impact our business, financial condition, results of operations and cash flows.

Global economic and political conditions, including impacts from the continuing COVID-19 pandemic, the Russia-Ukraine conflict and the inflationary cost environment, continue to be challenging for many of our government and commercial markets, as economic growth in many countries and emerging markets has remained low or declined, currency fluctuations have impacted profitability, credit markets have remained tight for certain counterparties of ours and some of our customers are dependent on government grants to fund purchases of our products and services.

In addition, conflicts in the Middle East and elsewhere have created many economic and political uncertainties that continue to impact worldwide markets, including impacts relating to new or increased tariffs and potential trade wars, and threats to national security vulnerabilities linked to country of origin. The length of time these adverse economic and political conditions may persist is unknown.

These global economic and political conditions have impacted and could continue to impact our business, financial condition, results of operations, and cash flows in a number of ways, including:

- Requests by certain of our government and commercial customers that we provide vendor financing, including in response to financial challenges surrounding state and local governments, which may cause us to retain exposure to the credit quality of our customers who we finance if we are unable to sell these receivables on terms acceptable to us.
- The inability of certain of our customers to obtain financing in order to make purchases from us and/or maintain their business, which may negatively impact our financial results.
- Challenges we face in budgeting and forecasting due to economic uncertainties in various parts of the U.S. and world economy, which could negatively impact our financial results if such budgets or forecasts are inaccurate.
- Deferment or cancellation of purchases and orders by customers may occur due to uncertainty about current and future global economic conditions, which could reduce future demand for our products and negatively impact our financial results.
- Intensifying political instability in a number of markets in which we operate could have a significant impact on our ability to grow and, in some cases, operate in such locations, which could negatively impact our financial results.

Returns on pension and retirement plan assets and interest rate changes could affect our earnings and cash flows in future periods.

We have large underfunded pension obligations, in part resulting from the fact that we retained almost all of the U.S. pension liabilities and a major portion of our non-U.S. pension liabilities following our past divestitures. The funding position of our pension plans is affected by the performance of the financial markets, particularly the equity and debt markets, and the interest rates used to calculate our pension obligations for funding and expense purposes. Minimum annual pension contributions are determined by government regulations and calculated based upon our pension funding status, interest rates, and other factors. If the financial markets perform poorly, we have been and could be required to make additional large contributions. The equity and debt markets can be volatile, and therefore our estimate of future contribution requirements can change dramatically in relatively short periods of time. Similarly, changes in interest rates can affect our contribution requirements. In volatile capital market environments, the uncertainty of material changes in future minimum required contributions increases.

We may not continue to have access to the capital markets for financing on acceptable terms and conditions, particularly if our credit ratings are downgraded, which could limit our ability to repay our indebtedness and could cause liquidity issues.

From time to time we access the capital markets to obtain financing. Our access to the capital markets and the bank loan markets at acceptable terms and conditions are impacted by many factors, including: (i) our credit ratings, (ii) the condition of the overall capital markets, (iii) strength and credit availability in the banking markets, and (iv) the state of the global economy. In addition, we frequently access the credit markets to obtain performance bonds, bid bonds, standby letters of credit and surety bonds, as well as to hedge foreign exchange risk and sell receivables. Furthermore, we may not be able to refinance our existing indebtedness (i) on commercially reasonable terms, (ii) on terms, including with respect to interest rates, as favorable as our current debt, or (iii) at all. We may not continue to have access to the capital markets or bank credit markets on terms acceptable to us and if we are unable to repay or refinance our debt, we cannot guarantee that we will be able to generate enough cash flows from operations or that we will be able to obtain enough capital to service our debt, fund our planned capital expenditures or pay future dividends.

We are rated investment grade by all three national rating agencies. Any downward changes by the rating agencies to our credit rating may negatively impact the value and liquidity of both our debt and equity securities. Under certain circumstances, an increase in the interest rate payable by us under our revolving credit facility, if any amounts are borrowed under such facility, could negatively affect our operating cash flows. In addition, a downgrade in our credit ratings could limit our ability to: (i) access the capital markets or bank credit markets, (ii) issue commercial paper (iii) provide performance bonds, bid bonds, standby letters of credit and surety bonds, (iv) hedge foreign exchange risk, (v) fund our foreign affiliates, (vi) sell receivables, and (vii) obtain favorable trade terms with suppliers. In addition, we may avoid taking actions that would otherwise benefit us or our stockholders, such as engaging in certain acquisitions or engaging in stock repurchases, that would negatively impact our credit rating.

Our exposure to exchange rate fluctuations on cross-border transactions and the translation of local currency results into U.S. dollars could negatively impact our results of operations.

We conduct business through our subsidiaries in many different countries, and fluctuations in currency exchange rates could have a significant impact on our reported consolidated results of operations, financial condition and cash flows, which are presented in U.S. dollars. Cross-border transactions, both with external parties and intercompany relationships, result in increased exposure to foreign exchange effects. Accordingly, significant changes in currency exchange rates, particularly the Euro, British pound, Canadian dollar and Australian dollar, has had in the past, and could continue to, cause fluctuations in the reported results of our businesses' operations that could negatively affect our results of operations. Additionally, the strengthening of certain currencies such as the Euro and U.S. dollar potentially exposes us to competitive threats from lower cost producers in other countries. Our sales are translated into U.S. dollars for reporting purposes. The strengthening of the U.S. dollar has in the past, and could continue to, result in unfavorable translation effects as the results of foreign locations are translated into U.S. dollars. For example, the strong U.S. dollar reduced the impact of cash generated from our foreign operations during 2022, driven by revenues and costs that are denominated in foreign currencies, and which we expect to continue to impact our operating cash flows and net earnings throughout 2023.

Item 1B: Unresolved Staff Comments

None.

Item 2: Properties

As of February 6, 2023, the material properties that we used in connection with our business, serving all segments, are as follows:

Location	Approximate Size in Sq. Ft. (In thousands)	Owned vs. Leased	Purpose
Schaumburg, Illinois, U.S.	345	Leased	Research & development and customer support
Elgin, Illinois, U.S.	301	Leased	Manufacturing and distribution
Krakow, Poland	301	Leased	Research & development and corporate administrative
Penang, Malaysia	300	Leased	Manufacturing and distribution, research & development and corporate administrative
Plantation, Florida, U.S.	182	Leased	Corporate administrative
Chicago, Illinois, U.S.	179	Leased	Corporate administrative (global headquarters)
Tel Aviv, Israel	152	Leased	Research & development and corporate administrative
British Columbia, Canada	108	Leased	Manufacturing and distribution and corporate administrative
Allen, Texas, U.S.	138	Owned	Manufacturing and distribution and corporate administrative
Richardson, Texas, U.S.	136	Leased	Manufacturing and distribution
Schio, Italy	125	Leased	Manufacturing, engineering, administrative

Item 3: Legal Proceedings

In addition to the matter referenced below, we are subject to legal proceedings and claims that have not been fully resolved and which have arisen in the ordinary course of business. In the opinion of management, the ultimate disposition of these matters will not have a material adverse effect on our consolidated financial position, liquidity or results of operations. However, an unfavorable resolution could have a material adverse effect on our consolidated financial position, liquidity or results of operations in the periods in which the matters are ultimately resolved, or in the periods in which more information is obtained that changes management's opinion of the ultimate disposition.

Refer to the description of "Hytera Litigation" in "Note 12: Commitments and Contingencies" to our consolidated financial statements included in Part II, Item 8 of this Form 10-K for information regarding our legal proceedings.

Item 4: Mine Safety Disclosures

Not applicable.

Information about our Executive Officers

The following are the persons who are the executive officers of the Company, their ages, and current titles as of February 16, 2023 and the positions they have held during the last five years with the Company or as otherwise noted:

Gregory Q. Brown; age 62; Chairman and Chief Executive Officer since May 3, 2011.

Karen E. Dunning; age 66; Senior Vice President, Human Resources since February 1, 2023; Senior Vice President, Human Resources, Labor & Employment, CAO Operations & Real Estate from November 2021 to January 2023; Corporate Vice President, Human Resources, Labor & Employment, CAO Operations & Real Estate from July 2019 to November 2021; Corporate Vice President, Human Resources, Labor & Employment, CAO Operations from December 2018 to June 2019; and Vice President, CAO Operations and Talent Acquisition from December 2016 to December 2018.

Katherine Maher, age 40; Corporate Vice President and Chief Accounting Officer since March 14, 2022; Vice President and Corporate Controller from November 2021 to March 2022; Finance Director, North America Credit & Systems Integration, from July 2020 to November 2021; and North America Distribution Finance Director from May 2018 to July 2020.

John P. "Jack" Molloy; age 51; Executive Vice President and Chief Operating Officer since November 18, 2021; Executive Vice President, Products and Sales from August 2018 to November 2021; and Executive Vice President, Worldwide Sales and Services from July 2017 to August 2018.

Rajan S. Naik; age 51; Senior Vice President, Strategy and Ventures, since December 2017.

James A. Niewiara; age 54; Senior Vice President, General Counsel since February 1, 2023; Senior Vice President, Commercial Law, Litigation, Antitrust & Intellectual Property from April 2020 to January 2023; Corporate Vice President, Lead Counsel, Commercial Law, Litigation & Antitrust from May 2019 to April 2020; and Corporate Vice President, Lead Counsel, Americas, Sales & Product Operations from January 2017 to May 2019.

Mahesh Saptharishi; age 45; Executive Vice President and Chief Technology Officer since November 18, 2021; Senior Vice President, Software Enterprise and Mobile Video, and Chief Technology Officer from June 2021 to November 2021; Chief Technology Officer & Senior Vice President, Software Enterprise from April 2021 to June 2021; Senior Vice President, Chief Technology Officer from February 2019 to April 2021; and Chief Technology Officer, Senior Vice President of Avigilon from September 2014 to January 2019. Avigilon, a provider of advanced security and video solutions, is a subsidiary of the Company, which the Company acquired in 2018.

Jason J. Winkler; age 48; Executive Vice President and Chief Financial Officer since July 1, 2020; Senior Vice President, Finance from September 2018 to June 2020; and Corporate Vice President, Finance, Global Sales & Services from February 2016 to September 2018.

Cynthia M. Yazdi; age 58; Senior Vice President, Communications & Brand since February 2, 2022; Senior Vice President, Chief of Staff, Communications & Brand and Motorola Solutions Foundation from November 2021 to February 2022; Senior Vice President, Chief of Staff, Marketing and Communications and Motorola Solutions Foundation from August 2018 to November 2021; Corporate Vice President, Chief of Staff to the Chairman and CEO, Global Marketing and Communications from February 2018 to August 2018; and Vice President, Chief of Staff, Global Marketing and Communications from September 2016 to February 2018.

The above executive officers will serve as executive officers of the Company until the regular meeting of the Board of Directors in May 2023 or until their respective successors are elected. There is no family relationship between any of the executive officers listed above.

PART II

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

Motorola Solutions' common stock is listed on the New York Stock Exchange and trades under the symbol "MSI." The number of stockholders of record of its common stock on February 6, 2023 was 18,620. This figure does not include a substantially greater number of "street name" holders whose shares are held of record by banks, brokers and other financial institutions.

During 2022, we declared regular quarterly dividends of $0.79 per share of our common stock for each of the first three quarters of fiscal 2022, and $0.88 per share of our common stock for the fourth quarter of fiscal 2022. While we expect to continue to pay comparable regular quarterly dividends in 2023, any future dividend payments will be at the discretion of our Board of Directors and will depend upon our profits, financial requirements and other factors, including legal restrictions on the payment of dividends, general business conditions and such other factors as our Board of Directors deems relevant.

Unregistered Sales of Equity Securities

On December 14, 2022, the Company issued 7,747 shares of common stock in connection with the acquisition of Rave Mobile to certain former shareholders of Rave Mobile. The stock was issued for an aggregate grant-date fair value of $2 million that will be expensed over an average service period of two years. The foregoing transaction did not involve any underwriters, any underwriting discounts or commissions, or any public offerings. The shares with respect to the transaction were issued in reliance upon the exemption from registration provided by Section 4(a)(2) of the Securities Act of 1933, as amended, in a privately negotiated transaction not involving any public offerings or solicitations.

Issuer Purchases of Equity Securities

The following table provides information with respect to acquisitions by the Company of shares of its common stock during the quarter ended December 31, 2022.

Period	*(a) Total Number of Shares Purchased*	*(b) Average Price Paid per Share (1)*	*(c) Total Number of Shares Purchased as Part of Publicly Announced Plans or Program (2)*	*(d) Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Program (2)*
9/29/2022 to 10/26/2022	302,878	$ 226.63	302,878	$ 1,303,410,831
10/27/2022 to 11/21/2022	55,498	$ 245.11	55,498	$ 1,289,807,771
11/22/2022 to 12/28/2022	18,562	$ 253.99	18,562	$ 1,285,093,268
Total	376,938	$ 230.70	376,938	

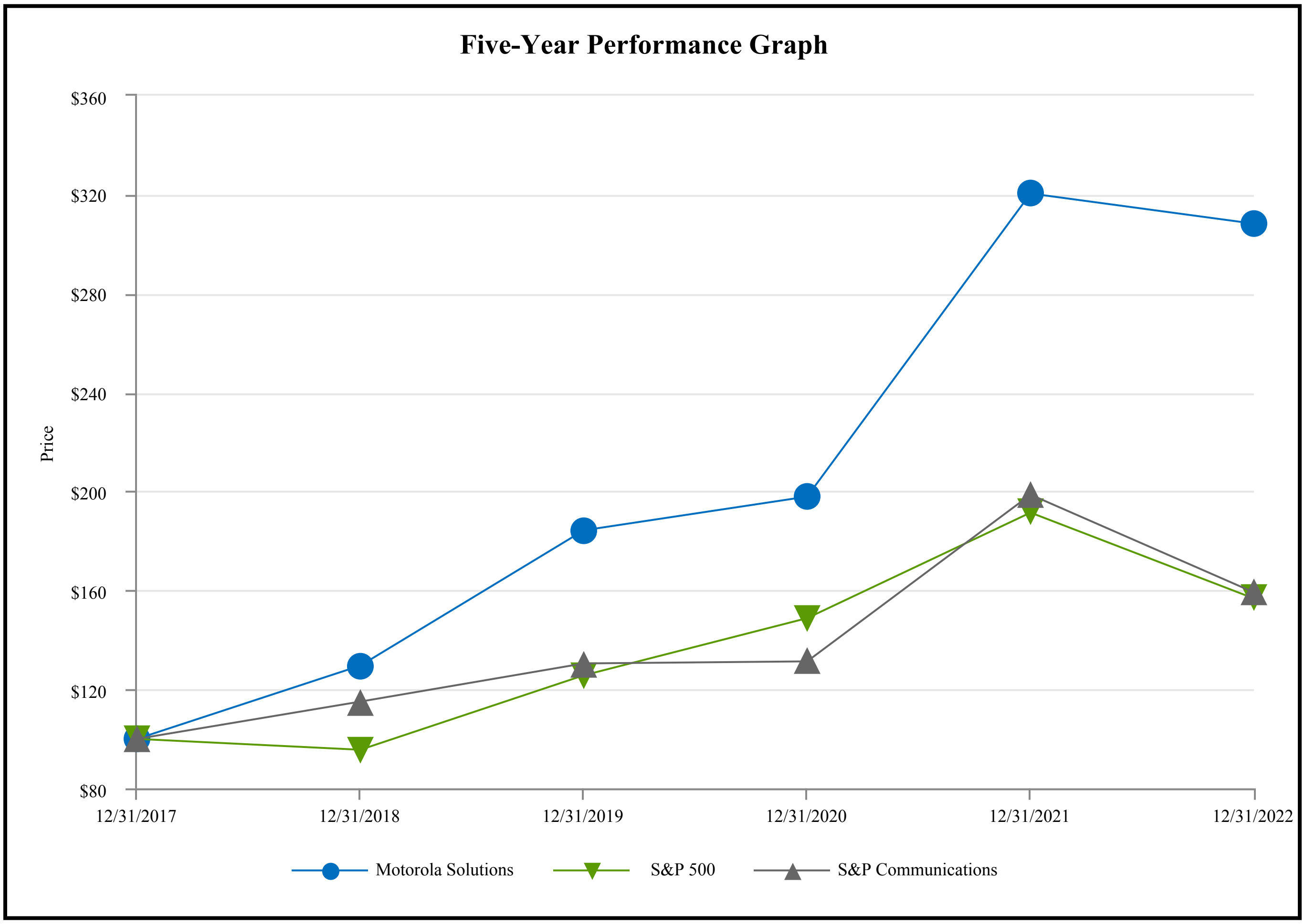
(1) Average price paid per share of common stock repurchased is the execution price, including commissions paid to brokers.

(2) As originally announced on July 28, 2011, and subsequently amended, including in May 2021, the Board of Directors has authorized the Company to repurchase an aggregate amount of up to $16.0 billion of its outstanding shares of common stock (the "share repurchase program"). The share repurchase program does not have an expiration date. As of December 31, 2022, the Company had used approximately $14.7 billion, including transaction costs, to repurchase shares, leaving approximately $1.3 billion of authority available for future repurchases.

Performance Graph

The following graph compares the five-year cumulative total shareholder returns of Motorola Solutions, Inc., the S&P 500 Index and the S&P Communications Equipment Index.

This graph assumes $100 was invested in the stock or the indices on December 31, 2017 and reflects the reinvestment of dividends.



Years Ended	December 31, 2017	December 31, 2018	December 31, 2019	December 31, 2020	December 31, 2021	December 31, 2022
Motorola Solutions	$ 100.00	$ 129.63	$ 184.32	$ 197.94	$ 320.48	$ 308.28
S&P 500	$ 100.00	$ 95.61	$ 125.70	$ 148.81	$ 191.48	$ 156.77
S&P Communications Equipment	$ 100.00	$ 115.08	$ 130.51	$ 131.34	$ 198.73	$ 159.23

Item 6: [Reserved.]

Item 7: Management’s Discussion and Analysis of Financial Condition and Results of Operations

The following is a discussion and analysis of our financial position as of December 31, 2022 and 2021 and results of operations and cash flows for each of the three years in the period ended December 31, 2022. This commentary should be read in conjunction with our consolidated financial statements and the notes thereto appearing under “Item 8: Financial Statements and Supplementary Data.”

Executive Overview

Our Business

Motorola Solutions is a global leader in public safety and enterprise security. Our technologies in Land Mobile Radio Communications ("LMR" or "LMR Communications"), Video Security and Access Control ("Video") and Command Center, bolstered by managed and support services, help make communities safer and businesses stay productive and secure. We serve more than 100,000 public safety and commercial customers in over 100 countries, providing “purpose-built” solutions designed for their unique needs, and we have a rich heritage of innovation focusing on advancing global safety for more than 90 years.

We manage our business organizationally through two segments: “Products and Systems Integration” and “Software and Services.” Within these segments, we have principal product lines that also follow our three major technologies: LMR Communications, Video and Command Center. In January 2023, we began using Command Center as a naming convention, eliminating the "Software" descriptor from Command Center Software in order to inform investors that the Company has software components more broadly across all technologies; this name change does not require any financial information to be reclassified from previous periods.

The Company has invested across these three technologies, evolving the Company’s LMR focus to purposefully integrate software, video security and access control solutions for public safety and enterprise customers globally.

Our strategy is to generate value through the integration of critical communications, video security, access control and data and analytics. While each technology individually strives to make users safer and more productive, we believe we can enable better outcomes for our customers when we unite these technologies as one connected system. Our goal is to help remove silos between systems, unify data, streamline workflows, and simplify operations for our customers. Across all three technologies, we offer cloud-based solutions, cybersecurity services, software and subscription services as well as managed and support services.

The schools we serve provide an example of our integrated technology ecosystem in action, which can be tailored to a school's unique needs and can span the end-to-end workflow for daily school operations as well as for emergencies. Video security and analytics such as license plate recognition can alert security and identify potentially suspicious activities, influencing building access. AI-powered video analytics can search video footage and help locate individuals based on physical descriptions. Software can help share real-time alerts and live video feeds with school officials and public safety agencies for incident response. Voice and data communications can notify school employees of security breaches, while mass notification and incident management platforms can help to coordinate an emergency response across school safety personnel, local law enforcement and administrators. Together, these technologies can help schools to detect, analyze, communicate and manage safety and security threats.

The principal products within each segment, by technology, are described below:

Products and Systems Integration Segment

In 2022, the segment’s net sales were $5.7 billion, representing 63% of our consolidated net sales.

LMR Communications

Our LMR Communications technology includes infrastructure and devices for LMR, public safety Long Term Evolution (“LTE”) and enterprise-grade private LTE. Our technology enables voice and multimedia collaborations across two-way radio, WiFi and public and private broadband networks. We are a global leader in the two-way radio category, including Project 25 (P25), Terrestrial Trunked Radio ("TETRA") and Digital Mobile Radio (DMR), as well as other PCR solutions. We also deliver LTE solutions for public safety, government and commercial users, including infrastructure and devices operating in both low-band and mid-band frequencies, including Citizens’ Broadband Radio Service (CBRS) frequencies. Primary sources of revenue for this technology come from selling devices and building telecommunications networks, including infrastructure, installation and integration with our customers’ technology environments.

We believe that public safety agencies and enterprises continue to trust LMR communications systems and devices because they are purpose-built and designed for reliability, availability, security and resiliency to withstand the most challenging conditions.

By adding broadband data capabilities to our two-way radios, we strive to provide our customers with greater functionality and multimedia access to the information and data they need in their workflows. Examples include application services such as GPS location to better protect lone workers, job dispatch to share detailed information and over-the-air programming to optimize device uptime. Our view is that complementary data applications such as these enable government, public safety and enterprise customers to work more efficiently and safely, while maintaining their mission-critical voice communications to remain connected and working in collaboration with others.

The LMR technology within the Products and Systems Integration segment represented 82% of the net sales of the total segment in 2022.

Video

Our Video technology includes video management infrastructure, AI-video powered security cameras including fixed and certain mobile video equipment as well as on-premise and cloud-based access control solutions. Since 2018, we have developed our video security and access control business through investments in research and development and acquisitions, directly contributing to our growth strategy to serve as a leader in end-to-end video security solutions and supporting the expansion of our portfolio.

We deploy video security and access control solutions to thousands of government and commercial customers around the world including school campuses, transportation systems, healthcare centers, public venues, utilities, prisons, factories, casinos, airports, financial institutions, government facilities, state and local law enforcement agencies and retailers. Organizations such as these utilize video security and access control to verify critical events or incidents in real-time and to provide data to investigate an event or incident after it happens.

Our view is that government and public safety customers in particular are increasingly turning to video security technologies, including fixed and mobile cameras, to increase visibility, accountability and safety for citizens, communities and first responders alike. Additionally, our view is that government, public safety agencies and businesses are increasingly turning to scalable, cloud-based multi-factor authentication access control to make their facilities more secure.

The Video technology within the Products and Systems Integration segment represented 18% of the net sales of the total segment in 2022.

Software and Services Segment

In 2022, the segment's net sales were $3.4 billion, representing 37% of our consolidated net sales.

LMR Communications

LMR Communications services include support and managed services, which offer a broad continuum of support for our customers. Support services include repair and replacement, technical support and preventative maintenance, and more advanced offerings such as system monitoring, software updates and cybersecurity services. Managed services range from partial to full operational support of customer-owned or Motorola Solutions-owned networks. Our customers' systems often have multi-year or multi-decade lifespans that help drive demand for software upgrades, device and infrastructure refresh opportunities, as well as additional services to monitor, manage, maintain and secure these complex networks and solutions. We strive to deliver services to our customers that help improve performance across their systems, devices and applications for greater safety and productivity.

Given the mission-critical nature of our customers' operational environments, we aim to design the LMR networks they rely on for availability, security and resiliency. We have a comprehensive approach to system upgrades that addresses hardware, software and implementation services. As new system releases become available, we work with our customers to upgrade software, hardware, or both, with respect to site controllers, comparators, routers, LAN switches, servers, dispatch consoles, logging equipment, network management terminals, network security devices such as firewalls and intrusion detection sensors, and more, on-site or remotely.

Designed to complement our customers' mission-critical LMR systems, our mission-critical cloud-based LMR technology is also available "as-a-service" with a multi-year subscription. We believe this technology increases resiliency and system reliability to help ensure users remain connected, even, for example, in natural disasters where physical communications infrastructure can be damaged.

The LMR technology within the Software and Services segment represented 67% of the net sales of the total segment in 2022.

Video

Video software includes video management software, decision management and digital evidence management software, certain mobile video equipment, and advanced vehicle location data analysis software, including license plate recognition. Our software is designed to complement video hardware systems, proving end-to-end video security to strive to keep people, property and assets safe.

Our video network management software is embedded with AI-enabled analytics to deliver operational insights to our customers by bringing attention to important events within their video footage. Given the growing volume of video content, we believe that analytics are critical to deliver meaningful, action-oriented insights. Our view is that these insights can help to proactively detect an important event in real time as well as reactively search video content to detect an important event that occurred in the past. For example, AI-enabled analytics can highlight unusual behavior such as a person at a facility out of hours, locate a missing child at a theme park with Appearance Search, flag a vehicle of interest at a school through license plate recognition, or send an alert through access control if doors are propped open at a hospital.

Our cloud technologies can offer organizations the ability to access, search and manage their video security and access control system from a centralized dashboard, accessible on devices such as smartphones and laptops. Additionally, our Avigilon fixed video systems can be cloud-administered by connecting to Avigilon Cloud Services (“ACS”), providing our customers with the ability to securely access video across their sites from a remote/central monitoring location.

Our Video services include our "video-as-a-service" subscription-based offerings for law enforcement, simplifying procurement by bundling hardware and software into a single subscription. For example, body-worn cameras and in-car video systems can be paired with either on-premises or cloud-based digital evidence management software and complementary command center products. Our cloud solutions are also sold as a service, available as single-year to multi-year hosted services, supporting our customers with upgrades and software enhancements to help ensure system performance and technological advancement.

The Video technology within the Software and Services segment represented 15% of the net sales of the total segment in 2022.

Command Center

Our Command Center portfolio consists of native cloud and on-premises software solutions that support the complex process of the public safety workflow from "911 call to case closure." From the moment a person contacts 911, an array of individuals engage to gather information to coordinate a response and manage the post-incident resolution. These individuals include dispatchers who route calls to police, fire and emergency medical services, first responders in the field, intelligence analysts who manage real-time operations, records specialists who preserve the integrity of information and evidence, crime analysts who identify patterns and accelerate investigations, and corrections officers who oversee jail and inmate management.

Additionally, to help ensure that individuals within the public safety workflow can work as efficiently, effectively and safely as possible, we believe it’s important that individuals within enterprise settings can communicate and collaborate directly with public safety agencies, particularly during emergencies. We remain focused on strengthening the intersection of public safety and enterprise security, offering solutions that are designed to help individuals, businesses and public safety agencies work together and share the information that better informs people to take appropriate action.

Our Command Center software supports these individuals through the three phases of incident response: incident awareness, incident management and post-incident resolution. Incident awareness software includes community engagement applications for tip submissions, crime mapping and evidence submission, panic buttons that can share real-time incident details and location, 911 call management software (including multimedia) and next-generation core services for 911 call routing. Incident management software includes voice and computer aided dispatch (CAD) for dispatch and coordinating first response, mass notification software, collaboration software to share operational updates, real-time intelligence software that shows a single, real-time view of video feeds and other alerts on a map, and field response and reporting to help frontline personnel collaborate, manage incident activity and file reports from the field. Post-incident resolution software includes centralized records and evidence management for record-keeping and judicial sharing, analytics including license plate recognition, and jail and inmate management to streamline the process and enable secure inter-agency information sharing.

As the public safety market continues to leverage both on-premises and cloud "software-as-a service" (“SaaS”) technologies to efficiently run their operations, reduce response times and increase officer availability, we offer both native cloud-based applications and cloud features that enhance on-premises applications. We believe our products and services enhance first responders’ situational awareness and safety by integrating critical communications, video security, data and analytics to provide an all-in-one operational view of the incident.

Another area of public safety evolution is increasing adoption of Next Generation 911 Core Services (“NGCS”), a group of products and services needed to create infrastructure connectivity in order to process a 911 call using Next Generation (“NG”) technology. The NG infrastructure is an Emergency Service IP Network ("ESInet"), which can carry voice, data and multimedia. ESInet enables 911 call takers at public safety answering points to respond to text, video and data. Our NGCS can be offered as a managed service and includes call routing, ESInet, location services, geographic information services, cybersecurity and our continuous network and security operations center dedicated to public safety.

Additionally, Command Center includes interoperability software that helps to ensure communication is not limited by coverage area, network technology or device type. Our solutions, including Kodiak, WAVE PTX and CriticalConnect, enable interoperability among devices across multiple networks. For example, a two-way radio network can connect with an LTE network making it possible for individuals to communicate securely and more easily across technologies.

The Command Center technology within the Software and Services segment represented 18% of the net sales of the total segment in 2022.

2022 Financial Results

- Net sales were $9.1 billion in 2022 compared to $8.2 billion in 2021.
- Operating earnings were $1.7 billion in each of 2021 and 2022.
- Net earnings attributable to Motorola Solutions, Inc. were $1.4 billion, or $7.93 per diluted common share in 2022, compared to earnings of $1.2 billion, or $7.17 per diluted common share in 2021.
- Our operating cash flow was $1.8 billion in each of 2021 and 2022.

- We returned over $1.4 billion of capital to shareholders, in the form of $836 million in share repurchases and $530 million in dividends in 2022.
- We increased our quarterly dividend by 11% to $0.88 per share in November 2022.
- We ended 2022 with a backlog position of $14.3 billion, up $788 million compared to 2021.

Segment Financial Highlights

- In the Products and Systems Integration segment, net sales were $5.7 billion in 2022, an increase of $695 million, or 14%, compared to $5.0 billion in 2021. On a geographic basis, net sales increased in both the North America region and the International region. Operating earnings were $913 million in 2022, compared to $760 million in 2021. Operating margins increased in 2022 to 15.9% from 15.1% in 2021 primarily due to higher sales volume and increased pricing partially offset by higher direct material costs, higher expenses associated with acquired businesses and $27 million higher share-based compensation expenses.
- In the Software and Services segment, net sales were $3.4 billion in 2022, an increase of $246 million, or 8%, compared to $3.1 billion in 2021. On a geographic basis, net sales increased in the North America region. Operating earnings were $748 million in 2022, compared to $907 million in 2021. Operating margins decreased in 2022 to 22.1% from 28.9% in 2021 due to a fixed asset impairment loss of $147 million related to assets constructed and used in the deployment of the Emergency Services Network ("ESN") services contract with the Home Office of the United Kingdom (the "Home Office") which both parties have agreed to exit.

Macroeconomic Events

During fiscal year 2022, we operated under challenging market conditions, influenced by events such as those discussed below. For a further discussion of our business and the trends and risks that we encounter in our business, please refer to “Part I. Item 1. Business” and “Part I. Item 1A. Risk Factors” in this Form 10-K.

Russia-Ukraine Conflict

During the first quarter of 2022, in response to Russia's invasion of Ukraine, we suspended all sales, provision of services and shipments of our products to Russia and Belarus, which did not constitute a material portion of our business. For the year ended December 31, 2021, our net sales in Russia and Belarus were less than $25 million. However, throughout 2022, we indirectly experienced impacts from the Russia-Ukraine conflict (as further described below). While we do not anticipate that the current posture of the Russia-Ukraine conflict will materially and adversely affect our results of operations, the conflict is still ongoing and has had, and may continue to have, a significant impact on the global macroeconomic and geopolitical environments, including increased volatility in capital and commodity markets, rapid changes to regulatory conditions (including the use of sanctions), supply chain and operational challenges for multinational corporations, inflationary pressures and an increased risk of cybersecurity incidents.

COVID-19, Supply Chain Disruptions & Inflationary Cost Environment

Throughout 2022, our supply chain was, and continues to be, impacted by global issues related to the effects of the COVID-19 pandemic, the Russia-Ukraine conflict and the inflationary cost environment particularly with respect to materials in the semiconductor market, including part shortages, increased freight costs, diminished transportation capacity and labor constraints. This has resulted in disruptions in our supply chain, as well as difficulties and delays in procuring certain semiconductor components. Cost increases were driven by elevated lead times and increased material costs, in particular the need to purchase semiconductor components from alternative sources, including brokers. While we continued to navigate supply chain constraints in 2022, we anticipate the broader impact of inflationary pressures and increased material and supply chain costs and disruptions (including elevated costs to procure materials within the semiconductor market) to continue into 2023. However, we expect global transportation costs to improve in 2023 as compared to 2022. We are closely monitoring supply chain disruptions and continue to remain focused on improving our supplier network, engineering alternative designs and working to reduce supply shortages. We also continue to actively manage our inventory in an effort to minimize supply chain disruptions and enable continuity of supply and services to our customers, and we expect to maintain elevated levels of inventory until supply constraints have been remediated.

In order to combat rising inflation in the U.S., the Federal Reserve has raised interest rates multiple times since the beginning of 2022. The increase in U.S. dollar interest rates and overall market conditions led to significant strengthening of the U.S. dollar against many other global currencies in 2022. The strong U.S. dollar negatively impacted cash generated from our foreign operations in 2022, driven by revenues and costs that are denominated in foreign currencies. We expect fluctuations in the value of U.S. dollar relative to other currencies to continue to impact our operating cash flows and net earnings throughout 2023.

Although the macroeconomic environment continued to introduce challenges during 2022, we are encouraged by customer demand for our products and services. Specifically, in our Software and Services segment, with the largely recurring nature of the business and our strong backlog position, we expect that the impact to operating margin will be limited during 2023. While we were encouraged by strong backlog and growth in our Products and Systems Integration segment throughout 2022, which we expect to continue to grow during 2023, supply constraints continue to impact our business and we expect demand for our products will continue to outpace our ability to obtain semiconductor component supply throughout 2023. Where appropriate, we have taken pricing actions around our product and service offerings to mitigate our exposure to inflationary pressures on our businesses and benefited from these adjustments during 2022. We expect to further benefit from such adjustments throughout

2023. Further, demand continues to be supported with ongoing sources of government funding, including the American Rescue Plan Act of 2021 ("ARPA"), which is intended to provide economic stimulus. We experienced the positive impact of the ARPA funding on our business and results of operations throughout 2022 and anticipate that the ARPA will continue to have a positive impact on our business in 2023.

We believe our existing balances of cash and cash equivalents, along with other short-term liquidity arrangements, will continue to be sufficient to satisfy our liquidity requirements associated with our existing operations. We were in compliance with all applicable covenants in the 2021 unsecured revolving credit facility as of December 31, 2022. Additionally, we have no bond maturities until 2024. We continue to assess our operating expenses and identify cost reducing initiatives, including lower travel costs, contractor spend and reducing our real estate footprint.

Lastly, as a result of the challenging market conditions described above, we evaluated whether there were any impairment indicators as of December 31, 2022, which included a review of our receivables and contract assets, inventory, right-of-use lease assets, long-lived assets, investments, goodwill and intangible assets. As of December 31, 2022, we concluded our assets were fairly stated and recoverable.

Recent Events

CMA Update

In October 2021, the United Kingdom’s ("the U.K.") Competition and Markets Authority (the "CMA") announced that it had opened a market investigation into the Mobile Radio Network for the Police and Emergency Services. This investigation affects Airwave, our private mobile radio communications network that we acquired in 2016. Airwave provides mission-critical voice and data communications to public emergency service agencies in Great Britain. In October 2022, the CMA published a provisional decision with its findings regarding competition and proposed remedies. We disagree with the CMA’s provisional decision and will continue to work with the CMA to demonstrate the value of the Airwave network and protect Airwave’s contractual position.

ESN Matters

During the year ended December 31, 2022, we signed a mutual agreement with the Home Office for us to exit the ESN communications systems contract early, inclusive of twelve months of transition services through the end of 2023. During the third quarter of 2022, we determined that the future service potential of the ESN communications systems contract was limited, based on the Company's intention to terminate the contract in advance of the contracted service term. We thus recorded a fixed asset impairment loss of $147 million related to assets constructed and used in the deployment of the contract based on our expectation that, more likely than not, the ESN long-lived asset group would be disposed of significantly before the end of its previously estimated useful life. The impairment loss was recorded in the Software and Services segment within cost of sales in the Consolidated Statements of Operations. The recognized impairment loss represents the amount by which the carrying amount of the asset group exceeded the fair value under a measurement of discounted cash flows.

Recent Acquisitions

Technology	Segment	Acquisition	Description	Purchase Price	Date of Acquisition
Command Center	Software and Services	Rave Mobile Safety, Inc. ("Rave Mobile")	Provider of mass notification and incident management services.	$553 million and share-based compensation of $2 million	December 14, 2022
LMR Communications	Products and Systems Integration	Futurecom Systems Group, ULC	Provider of radio coverage extension solutions.	$30 million	October 25, 2022
LMR Communications	Products and Systems Integration	Barrett Communications Pty Ltd	Provider of specialized radio communications.	$18 million	August 8, 2022
Video Security and Access Control	Products and Systems Integration	Videotec S.p.A.	Provider of ruggedized video security solutions.	$23 million and share-based compensation of $4 million	May 12, 2022

Video Security and Access Control	Software and Services	Calipsa, Inc.	Provider of cloud-native advanced video analytics.	$39 million and share-based compensation of $4 million	April 19, 2022
LMR Communications	Software and Services	TETRA Ireland Communications Limited	Provider of Ireland's National Digital Radio Service.	$120 million	March 23, 2022
Video Security and Access Control	Products and Systems Integration Software and Services	Ava Security Limited	Provider of cloud-native video security and analytics.	$388 million and share-based awards and compensation of $7 million	March 3, 2022
Command Center	Software and Services	911 Datamaster, Inc.	Provider of Next Generation 911 data solutions that help to ensure emergency calls are accurately located and routed based on the caller's location.	$35 million and share-based compensation of $3 million	December 16, 2021
Video Security and Access Control	Products and Systems Integration Software and Services	Envysion, Inc.	Provider of enterprise video security and business analytics.	$124 million and share-based compensation of $1 million	October 29, 2021
Video Security and Access Control	Products and Systems Integration Software and Services	Openpath Security, Inc.	Provider of cloud-based mobile access control.	$298 million and share-based compensation of $29 million	July 15, 2021
Command Center	Software and Services	Callyo	Provider of cloud-based mobile applications for law enforcement in North America, including critical mobile technological capabilities that enable information to flow seamlessly from the field to the command center.	$63 million, inclusive of share-based compensation of $3 million	August 28, 2020
Video Security and Access Control	Products and Systems Integration Software and Services	Pelco, Inc.	Global provider of video security solutions, adding a broad range of products for a variety of commercial and industrial environments and use cases.	$110 million	July 31, 2020
Video Security and Access Control	Products and Systems Integration Software and Services	IndigoVision Group plc	Provider of video security solutions to enhance geographical reach across a wider customer base.	$37 million	June 16, 2020
LMR Communications	Software and Services	Unnamed cybersecurity services business	Provider of vulnerability assessments, cybersecurity consulting, and managed services, including security monitoring of network operations.	$32 million	April 30, 2020
LMR Communications	Software and Services	Unnamed cybersecurity services business	Provider of vulnerability assessments, cybersecurity consulting, managed services, and remediation and response capabilities.	$40 million, inclusive of share-based compensation of $6 million	March 3, 2020

Climate Change

We expect that our operations and supply chain will become increasingly subject to federal, state, local and foreign laws, regulations and international treaties and industry standards relating to climate change. For example, in the European Union (the “EU”), the EU Corporate Sustainability Reporting Directive, Corporate Sustainability Due Diligence Directive and EU taxonomy initiatives will introduce additional due diligence and disclosure requirements addressing sustainability that we expect will apply to us in the coming years.

Recently, in October 2021 the U.K.’s Cabinet Office began requiring companies bidding on contracts with the U.K. government that have a value of over £5m per year to have carbon reduction plans that contain a commitment to achieving net zero emissions by 2050 for U.K. operations. This requirement applies to our operations in the U.K. Although Motorola Solutions UK Ltd. and Airwave Solutions Ltd., our U.K. subsidiaries, each committed in early 2022 to achieving net zero emissions by 2050 for such entities' U.K. operations, this requirement and any similar future requirements and other increased regulation of climate change concerns could subject us to additional costs and restrictions, impact our competitive position or require us to make certain changes to our manufacturing practices and/or product designs.

Looking Forward

We expect continued growth within our global LMR installed base as a number of events such as natural disasters and large-scale incidents continue to reinforce the importance of having secure, reliable LMR for public safety. We believe our augmentation of LMR with broadband solutions will also drive growth, as we expect our customers will look to integrate valuable data capabilities. We expect to provide additional services to existing LMR customers as communication networks become more complex, software-centric and data-driven.

As public safety needs continue to evolve, we anticipate growth opportunities within the command center as our Command Center suite covers the public safety workflow from "911 call to case closure" and management. We expect increased growth in our integrated software next generation core services and our cloud-based solutions, such as the PremierOne Cloud suite, as well as hybrid cloud solutions that provide a migration path from on-premises software solutions to cloud-connected capabilities.

Within Video, we expect growth across our portfolio of fixed and mobile security solutions embedded with advanced analytics and access control solutions. We believe drivers include expansion of traditional video sales beyond commercial customers to government and public safety customers. Additionally, we expect customers to continue to embrace analytics that convert video into data and the scalability of the cloud to run their operations, and we also expect continued expansion of offerings such as video-as-a-service and ACS.

Finally, we anticipate new opportunities from the investments we are making to integrate our LMR, Video and Command Center technologies into one unified ecosystem. We have made go-to-market and research and development investments in both Video and our Command Center technologies with growth in mind. We have made a number of acquisitions and we see opportunities to continue to rationalize costs within both segments of our business, further driving operating leverage in our businesses. We believe our integrated products and services for public and enterprise safety can enable strong collaboration by removing system silos, simplifying management and automating workflows.

While we anticipate growth in our business, we also expect to be impacted by a higher tax rate as we look forward, mainly based on lower continuing benefits from stock-based compensation and an increase in the tax rate in the U.K.

Refer to “Macroeconomic Events” set forth in this “Part II. Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations” of this Form 10-K for a further discussion of our outlook with respect to the continuing impact of certain macroeconomic events on our financial condition, results of operations and cash flows.

Results of Operations

(Dollars in millions, except per share amounts)	2022	% of Sales **	2021	% of Sales **	2020	% of Sales **
	Years ended December 31					
Net sales from products	**$ 5,368**		$ 4,606		$ 4,087	
Net sales from services	**3,744**		3,565		3,327	
Net sales	**9,112**		8,171		7,414	
Costs of product sales	**2,595**	**48.3 %**	2,104	45.7 %	1,872	45.8 %
Costs of services sales	**2,288**	**61.1 %**	2,027	56.9 %	1,934	58.1 %
Costs of sales	**4,883**	**53.6 %**	4,131	50.6 %	3,806	51.3 %
Gross margin	**4,229**	**46.4 %**	4,040	49.4 %	3,608	48.7 %
Selling, general and administrative expenses	**1,450**	**15.9 %**	1,353	16.6 %	1,293	17.4 %
Research and development expenditures	**779**	**8.5 %**	734	9.0 %	686	9.3 %
Other charges	**339**	**3.7 %**	286	3.5 %	246	3.3 %
Operating earnings	**1,661**	**18.2 %**	1,667	20.4 %	1,383	18.7 %
Other income (expense):						
Interest expense, net	**(226)**	**(2.5)%**	(208)	(2.5)%	(220)	(3.0)%
Gains (losses) on sales of investments and businesses, net	**3**	**— %**	1	— %	(2)	— %
Other, net	**77**	**0.8 %**	92	1.1 %	13	0.2 %
Total other expense	**(146)**	**(1.6)%**	(115)	(1.4)%	(209)	(2.8)%
Net earnings before income taxes	**1,515**	**16.6 %**	1,552	19.0 %	1,174	15.8 %
Income tax expense	**148**	**1.6 %**	302	3.7 %	221	3.0 %
Net earnings	**1,367**	**15.0 %**	1,250	15.3 %	953	12.9 %
Less: Earnings attributable to noncontrolling interests	**4**	**— %**	5	0.1 %	4	0.1 %
Net earnings*	**$ 1,363**	**15.0 %**	$ 1,245	15.2 %	$ 949	12.8 %
Earnings per diluted common share*	**$ 7.93**		$ 7.17		$ 5.45	

* Amounts attributable to Motorola Solutions, Inc. common shareholders.

** Percentages may not add due to rounding.

Geographic Market Sales by Locale of End Customer

	2022	2021	2020
North America	**70 %**	68 %	68 %
International	**30 %**	32 %	32 %
	100 %	100 %	100 %

Results of Operations—2022 Compared to 2021

Net Sales

(In millions)	Years ended December 31 2022	2021	% Change
Net sales from Products and Systems Integration	**$ 5,728**	$ 5,033	14 %
Net sales from Software and Services	**3,384**	3,138	8 %
Net sales	**$ 9,112**	$ 8,171	12 %

The Products and Systems Integration segment's net sales represented 63% of our net sales in 2022, compared to 62% in 2021. The Software and Services segment's net sales represented 37% of our net sales in 2022, compared to 38% in 2021.

Net sales increased by $941 million, or 12%, compared to 2021. The 14% increase in net sales within the Products and Systems Integration segment was driven by a 15% increase in the North America region and a 10% increase in the International region. The 8% increase in the Software and Services segment was driven by a 14% increase in the North America region and consistent net sales within the International region. The increase in net sales included:

- an increase in the Products and Systems Integration segment, inclusive of $53 million of revenue from acquisitions, driven by growth in LMR, inclusive of public safety LMR products and PCR, and Video; and
- an increase in the Software and Services segment, inclusive of $68 million of revenue from acquisitions, driven by an increase in Video, LMR services and Command Center; partially offset by
- $216 million from unfavorable currency rates.

Regional results included:

- a 15% increase in the North America region, inclusive of revenue from acquisitions, driven by growth in LMR, Video and Command Center; and
- a 5% increase in the International region, inclusive of revenue from acquisitions, driven by growth in LMR, Video and Command Center.

Products and Systems Integration

The 14% increase in the Products and Systems Integration segment was driven by the following:

- $510 million, or 12% growth in public safety LMR products and PCR, inclusive of revenue from acquisitions, driven by both the North America and International regions; and
- $185 million, or 22% growth in Video, inclusive of revenue from acquisitions, in both the North America and International regions;
- inclusive of $98 million from unfavorable currency rates.

Software and Services

The 8% increase in the Software and Services segment was driven by the following:

- $112 million, or 28% growth in Video, inclusive of revenue from acquisitions, driven by the North America region;
- $69 million, or 3% growth in LMR services, inclusive of revenue from acquisitions, driven by the North America region; and
- $65 million, or 12% growth in Command Center, inclusive of revenue from acquisitions, driven by both the North America and International regions;
- inclusive of $118 million from unfavorable currency rates.

Gross Margin

(In millions)	Years ended December 31 2022	2021	% Change
Gross margin	**$ 4,229**	$ 4,040	5 %

Gross margin was 46.4% of net sales in 2022 compared to 49.4% of net sales in 2021. The primary drivers of this decrease in gross margin as a percentage of net sales were:

- lower gross margin as a percentage of net sales in the Software and Services segment, inclusive of acquisitions, primarily driven by a fixed asset impairment loss of $147 million related to assets constructed and used in the deployment of the ESN services contract with the Home Office which we have executed an agreement to exit; and

- lower gross margin as a percentage of net sales in the Products and Systems Integration segment, inclusive of acquisitions, primarily driven by increased direct material costs and freight costs, partially offset by pricing actions and higher sales volume.

Selling, General and Administrative ("SG&A") Expenses

	Years ended December 31		
(In millions)	**2022**	2021	% Change
Selling, general and administrative expenses	**$ 1,450**	$ 1,353	7 %

SG&A expenses increased $97 million, or 7% in 2022 compared to 2021. SG&A expenses were 15.9% of net sales in 2022 compared to 16.6% of net sales in 2021. The increase in SG&A expenses was primarily due to higher expenses associated with acquired businesses, higher share-based compensation and higher travel expenses.

Research and Development ("R&D") Expenditures

	Years ended December 31		
(In millions)	**2022**	2021	% Change
Research and development expenditures	**$ 779**	$ 734	6 %

R&D expenditures increased $45 million, or 6% in 2022 compared to 2021 primarily due to an investment in R&D, higher expenses associated with acquired businesses and higher share-based compensation. R&D expenditures were 8.5% of net sales in 2022 and 9.0% of net sales in 2021.

Other Charges

	Years ended December 31	
(In millions)	**2022**	2021
Other charges	**$ 339**	$ 286

Other charges increased $53 million, or 19% in 2022 compared to 2021 primarily due to the following:

- $257 million of intangible asset amortization expense in 2022 compared to $236 million in 2021;
- $23 million of legal settlements in 2022 compared to $3 million in 2021;
- $24 million of operating lease asset impairments in 2022 compared to $10 million in 2021;
- $12 million of fixed asset impairments in 2022 that did not occur in 2021; and
- $23 million of charges for acquisition-related transaction fees in 2022 compared to $15 million in 2021; partially offset by
- $15 million of gain recoveries from the legal settlement under the Hytera bankruptcy proceedings in 2022 that did not occur in 2021; and
- $18 million of net reorganization of business charges in 2022 compared to $24 million in 2021 (see "Note 14: Reorganization of Businesses" to our consolidated financial statements in “Part II. Item 8. Financial Statements and Supplementary Data” of this Form 10-K for further information.

Operating Earnings

	Years ended December 31	
(In millions)	**2022**	2021
Operating earnings from Products and Systems Integration	**$ 913**	$ 760
Operating earnings from Software and Services	**748**	907
Operating earnings	**$ 1,661**	$ 1,667

Operating earnings decreased $6 million, or 0.4% in 2022 compared to 2021. The decrease in Operating earnings was due to:

- a $159 million decrease in the Software and Services segment from 2021 to 2022, primarily driven by a fixed asset impairment loss of $147 million related to assets constructed and used in the deployment of the ESN services contract with the Home Office which we have executed an agreement to exit; partially offset by
- a $153 million increase in the Products and Systems Integration segment from 2021 to 2022, driven by higher sales volume and increased pricing, partially offset by higher direct material costs and higher operating expenses. The increase in operating expenses was primarily driven by higher expenses associated with acquired businesses and $27 million higher share-based compensation expense, partially offset by a $15 million gain from Hytera legal recoveries.

Interest Expense, net

(In millions)	*Years ended December 31* **2022**	2021
Interest expense, net	**$ (226)**	$ (208)

The $18 million increase in net interest expense in 2022 compared to 2021 was a result of higher debt outstanding and the reversal of a non-cash interest accrual related to an international tax audit in 2021, partially offset by higher interest income earned on cash.

Gains (losses) on Sales of Investments and Businesses, net

(In millions)	*Years ended December 31* **2022**	2021
Gains (losses) on sales of investments and businesses, net	**$ 3**	$ 1

The net gains on sales of investments and businesses were primarily related to the sales of various equity investments.

Other, net

(In millions)	*Years ended December 31* **2022**	2021
Other, net	**$ 77**	$ 92

Other, net income decreased $15 million in 2022 compared to 2021 primarily due to:

- a $61 million loss on derivatives in 2022 compared to a $30 million loss on derivatives in 2021;
- a $30 million loss on fair value adjustments to equity investments in 2022 compared to an $8 million loss on fair value adjustments to equity investments in 2021; and
- a $3 million loss on equity method investments in 2022 compared to a $5 million gain on equity method investments in 2021; partially offset by
- $21 million gain on TETRA Ireland equity method investment in 2022 that did not occur in 2021;
- $37 million of foreign currency gains in 2022 compared to $17 million of foreign currency gains in 2021; and
- a $6 million loss on the extinguishment of long-term debt in 2022 compared to a $18 million loss on the extinguishment of long-term debt in 2021 (see "Note 5: Debt and Credit Facilities" to our consolidated financial statements in “Part II. Item 8. Financial Statements and Supplementary Data” of this Form 10-K for further information).

Effective Tax Rate

(In millions)	*Years ended December 31* **2022**	2021
Income tax expense	**$ 148**	$ 302

Income tax expense decreased by $154 million in 2022 compared to 2021, for an effective tax rate of 9.8%, which is lower than the current U.S. federal statutory rate of 21% primarily due to:

- a $77 million non-recurring net deferred tax benefit as a result of an intra-group transfer of certain intellectual property rights in 2022 (see "Note 7: Income Taxes" to our consolidated financial statements in “Part II. Item 8. Financial Statements and Supplementary Data” of this Form 10-K for further information);
- $68 million of benefits due to the recognition of excess tax benefits on share-based compensation;
- a $59 million benefit from the foreign derived intangible income deduction; and
- a $47 million benefit due to a change in the Company's ability to utilize tax attribute carryforwards resulting in the partial release of valuation allowances.

Our effective tax rate in 2021 was 19.5%, which is lower than the current U.S. federal statutory rate of 21% primarily due to:

- a $34 million benefit due to a change in the Company's ability to utilize tax attribute carryforwards resulting in the partial release of valuation allowances; and
- $32 million of benefits due to the recognition of excess tax benefits on share-based compensation.

Results of Operations—2021 Compared to 2020

Net Sales

	Years ended December 31		
(In millions)	2021	2020	% Change
Net sales from Products and Systems Integration	**$ 5,033**	$ 4,634	9 %
Net sales from Software and Services	**3,138**	2,780	13 %
Net sales	**$ 8,171**	$ 7,414	10 %

The Products and Systems Integration segment’s net sales represented 62% of our net sales in 2021, compared to 63% in 2020. The Software and Services segment’s net sales represented 38% of our net sales in 2021, compared to 37% in 2020.

Net sales increased by $757 million, or 10%, in 2021 compared to 2020. The 9% increase in net sales within the Products and Systems Integration segment was driven by a 9% increase in the North America region and an 8% increase in the International region. The 13% increase in the Software and Services segment was driven by a 14% increase in the North America region and a 11% increase in the International region. The increase in net sales included:

- an increase in the Products and Systems Integration segment, inclusive of $89 million of revenue from acquisitions, driven by growth in LMR, inclusive of public safety LMR products and PCR, and Video;
- growth in the Software and Services segment, inclusive of $31 million of revenue from acquisitions, driven by an increase in LMR services, Video and Command Center; and
- $130 million from favorable currency rates.

Regional results include:

- a 11% increase in the North America region, inclusive of revenue from acquisitions, driven by growth in LMR, Video and Command Center; and
- a 9% increase in the International region, inclusive of revenue from acquisitions, driven by growth in LMR, Video and Command Center.

Products and Systems Integration

The 9% increase in the Products and Systems Integration segment was driven by the following:

- $211 million, or 5% growth in public safety LMR products and PCR, driven by both the North America and International regions;
- $188 million, or 29% growth in Video, inclusive of revenue from acquisitions, in both the North America and International regions;
- inclusive of $60 million from favorable currency rates.

Software and Services

The 13% increase in the Software and Services segment was driven by the following:

- $197 million, or 10% growth in LMR services, driven by both the North America and International regions;
- $112 million, or 39% growth in Video software, inclusive of revenue from acquisitions, driven by both the North America and International regions;
- $49 million, or 10% growth in Command Center, inclusive of revenue from acquisitions, driven by both the North America and International regions;
- inclusive of $70 million from favorable currency rates.

Gross Margin

	Years ended December 31		
(In millions)	**2021**	2020	% Change
Gross margin	**$ 4,040**	$ 3,608	12 %

Gross margin was 49.4% of net sales in 2021 compared to 48.7% of net sales in 2020. The primary drivers of this increase in gross margin as a percentage of net sales were:

- higher gross margin as a percentage of net sales in the Software and Services segment, inclusive of acquisitions, primarily driven by higher gross margin contribution from sales growth and improved mix of service offerings, partially offset by higher employee incentive costs; and
- consistent gross margin as a percentage of net sales in the Products and Systems Integration segment as a result of favorable product mix and reduced reorganization of business charges, offset by an increase in employee incentive costs.

Selling, General and Administrative Expenses

	Years ended December 31		
(In millions)	**2021**	2020	% Change
Selling, general and administrative expenses	**$ 1,353**	$ 1,293	5 %

SG&A expenses increased $60 million, or 5% in 2021 compared to 2020. SG&A expenses were 16.6% of net sales in 2021 compared to 17.4% of net sales in 2020. The increase in SG&A expenses was primarily due to higher employee incentive costs, expenses associated with acquired businesses, higher travel expenses and increased share-based compensation expenses. The overall increase in SG&A expenses was partially offset by lower Hytera-related legal expenses.

Research and Development Expenditures

	Years ended December 31		
(In millions)	**2021**	2020	% Change
Research and development expenditures	**$ 734**	$ 686	7 %

R&D expenditures increased $48 million, or 7% in 2021 compared to 2020 primarily due to higher employee incentive costs and higher expenses associated with acquired businesses, partially offset by lower share-based compensation expenses. R&D expenditures were 9.0% of net sales in 2021 and 9.3% of net sales in 2020.

Other Charges

	Years ended December 31	
(In millions)	**2021**	2020
Other charges	**$ 286**	$ 246

Other charges increased $40 million, or 16% in 2021 compared to 2020 primarily due to the following:

- $50 million gain on the sale of property, plant and equipment in 2020 that did not recur in 2021;
- $236 million of intangible asset amortization expense in 2021 compared to $215 million in 2020;
- $10 million of operating lease asset impairments in 2021 that did not occur in 2020; and
- $15 million of charges for acquisition-related transaction fees in 2021 compared to $9 million in 2020; partially offset by
- $24 million of net reorganization of business charges in 2021 compared to $57 million in 2020 (see "Note 14: Reorganization of Businesses" to our consolidated financial statements in “Part II. Item 8. Financial Statements and Supplementary Data” of this Form 10-K for further information);
- $3 million of legal settlements in 2021 compared to $9 million in 2020; and
- $5 million of fixed asset impairments in 2020 that did not recur in 2021.

Operating Earnings

(In millions)	Years ended December 31 2021	2020
Operating earnings from Products and Systems Integration	**$ 760**	$ 656
Operating earnings from Software and Services	**907**	727
Operating earnings	**$ 1,667**	$ 1,383

Operating earnings increased $284 million, or 21% in 2021 compared to 2020. The increase in Operating earnings was due to:

- Software and Services segment increased $180 million from 2020 to 2021 driven by higher sales and gross margin contribution and an improved mix of service offerings, offset by higher operating expenses. The increase in operating expenses was driven by higher expenses associated with acquired businesses, higher employee incentive costs and higher intangible assets amortization expense, partially offset by $11 million lower reorganization of business expenses and $7 million lower share-based compensation expenses; and
- Products and Systems Integration increased $104 million from 2020 to 2021 primarily driven by increased sales volume, partially offset by higher operating expenses. The increase in operating expenses was driven by a $50 million gain on the sale of property, plant and equipment in 2020 that did not recur in 2021, higher employee incentive costs and higher expenses associated with acquired businesses, partially offset by: $43 million lower reorganization of business charges and $16 million lower Hytera-related legal expenses.

Interest Expense, net

(In millions)	Years ended December 31 2021	2020
Interest expense, net	**$ (208)**	$ (220)

The $12 million decrease in net interest expense in 2021 compared to 2020 was a result of the reversal of an $11 million non-cash interest accrual related to an international tax audit and lower interest rates on debt outstanding.

Gains (losses) on Sales of Investments and Businesses, net

(In millions)	Years ended December 31 2021	2020
Gains (Losses) on sales of investments and businesses, net	**$ 1**	$ (2)

The net gains (losses) on sales of investments and businesses were primarily related to the sales of various equity investments.

Other, net

(In millions)	Years ended December 31 2021	2020
Other, net	**$ 92**	$ 13

Net Other income increased $79 million in 2021 compared to 2020 primarily due to:

- $17 million of foreign currency gains in 2021 compared to $44 million of foreign currency losses in 2020;
- $123 million of net periodic pension and postretirement benefits in 2021 compared to $81 million of net periodic pension and postretirement benefits in 2020;
- an $18 million loss on the extinguishment of long term debt in 2021 compared to a $56 million loss on the extinguishment of long-term debt in 2020 (see "Note 5: Debt and Credit Facilities" to our consolidated financial statements in “Part II. Item 8. Financial Statements and Supplementary Data” of this Form 10-K for further information); and
- $4 million of investment impairments in 2020 that did not occur in 2021; partially offset by
- $30 million loss on derivatives in 2021 compared to a $25 million gain on derivatives in 2020; and
- an $8 million loss on fair value adjustments to equity investments in 2021 compared to a $6 million gain on fair value adjustments to equity investments in 2020.

Effective Tax Rate

(In millions)	Years ended December 31 2021	2020
Income tax expense	**$ 302**	$ 221

Income tax expense increased by $81 million in 2021 compared to 2020, for an effective tax rate of 19.5%, which is lower than the current U.S. federal statutory rate of 21% primarily due to:

- a $34 million benefit due to a change in the Company's ability to utilize tax attribute carryforwards resulting in the partial release of valuation allowances; and
- $32 million of benefits due to the recognition of excess tax benefits on share-based compensation.

Our effective tax rate in 2020 was 18.8%, which is lower than the current U.S. federal statutory rate of 21% primarily due to:

- $48 million of benefits due to the recognition of excess tax benefits on share-based compensation; and
- $28 million of benefits due to the recognition of increased prior and current R&D tax credits.

Reorganization of Businesses

In 2022, we recorded net reorganization of business charges of $36 million relating to the separation of 460 employees, of which 150 were indirect employees and 310 were direct employees. The $36 million of charges included $18 million recorded to Cost of sales and $18 million recorded to Other charges. Included in the aggregate $36 million were charges of $36 million for employee separation costs and $10 million for exit costs, partially offset by $10 million of reversals for accruals no longer needed.

During 2021, we recorded net reorganization of business charges of $32 million relating to the separation of 600 employees, of which 200 were indirect employees and 400 were direct employees. The $32 million of charges included $8 million recorded to Cost of sales and $24 million recorded to Other charges. Included in the aggregate $32 million were charges of $42 million for employee separation costs, partially offset by $10 million of reversals for accruals no longer needed.

During 2020, we recorded net reorganization of business charges of $86 million relating to the separation of 1,200 employees, of which 400 were indirect employees and 800 were direct employees. The $86 million of charges included $29 million recorded to Cost of sales and $57 million recorded to Other charges. Included in the aggregate $86 million were charges of $100 million for employee separation costs and $2 million for exit costs, partially offset by $16 million of reversals for accruals no longer needed.

The following table displays the net charges incurred by business segment due to such reorganizations:

Years ended December 31	***2022***	*2021*	*2020*
Products and Systems Integration	**$ 21**	$ 25	$ 69
Software and Services	**15**	7	17
	36	$ 32	$ 86

Cash payments for employee severance in connection with the reorganization of business plans were $34 million, $77 million, and $85 million in 2022, 2021, and 2020, respectively. The reorganization of business accruals for employee separation costs at December 31, 2022 were $26 million which we expect to pay within one year.

At January 1, 2022, we did not have an accrual for exit costs. There were $10 million of exit cost charges in 2022 related to our exit of the ESN contract with the Home Office. The $10 million of exit costs are recorded in Accrued liabilities in our Consolidated Balance Sheet at December 31, 2022, and are expected to be paid within one year.

Liquidity and Capital Resources

	Years Ended December 31		
	2022	*2021*	*2020*
Cash flows provided by (used for):			
Operating activities	**$ 1,823**	$ 1,837	$ 1,613
Investing activities	**(1,387)**	(742)	(437)
Financing activities	**(906)**	(429)	(966)
Effect of exchange rates on cash and cash equivalents	**(79)**	(46)	43
Increase (decrease) in cash and cash equivalents	**$ (549)**	$ 620	$ 253

Cash and Cash Equivalents

At December 31, 2022, $879 million of our $1.3 billion cash and cash equivalents balance was held in the U.S. and $446 million was held in other countries, with $74 million held in the U.K.. Restricted cash was $2 million at each of December 31, 2022 and December 31, 2021.

In 2022, we repatriated $378 million in cash to the U.S. from international jurisdictions. We routinely repatriate a portion of non-U.S. earnings each year. We have recorded income tax expense for foreign withholding tax and distribution taxes on such earnings and, under current U.S. tax laws, do not expect to incur material incremental U.S. tax on repatriation.

Where appropriate, we may also pursue capital reduction activities; however, such activities can be involved and lengthy. While we regularly repatriate funds, and a portion of offshore funds can be repatriated with minimal adverse financial impact, repatriation of some of these funds may be subject to delay due to local country approvals.

Operating Activities

The decrease in operating cash flows from 2021 to 2022 was driven by:

- an increase in working capital, inclusive of higher inventory;
- higher employee incentive costs; and
- $50 million of higher income tax payments; partially offset by
- higher earnings.

The increase in operating cash flows from 2020 to 2021 was driven by:

- an increase in operating earnings as a result of higher sales volume; partially offset by
- $76 million of higher income tax payments.

Investing Activities

The increase in net cash used for investing activities from 2021 to 2022 was primarily due to:

- $656 million increase in acquisitions and investments, driven by acquisitions of $1.2 billion in 2022 compared to $521 million in 2021;
- $30 million increase in sales of investments in 2022 compared to 2021; and
- $13 million increase in capital expenditures in 2022 compared to 2021.

The increase in net cash used for investing activities from 2020 to 2021 was primarily due to:

- $234 million increase in acquisitions and investments, driven by acquisitions of $521 million in 2021 compared to $287 million in 20201;
- $50 million decrease in proceeds from the sale of property, plant and equipment in 2020 that did not recur in 2021; and
- $26 million increase in capital expenditures in 2021 compared to 2020 due to higher expenditures for the Airwave and ESN networks.

Financing Activities

The increase in cash used for financing activities in 2022 compared to cash used for financing activities in 2021 was driven by (also see further discussion in "Debt," "Credit Facilities," "Share Repurchase Program" and "Dividends" in this section below):

- $836 million used for purchases under our share repurchase program in 2022 compared to $528 million in 2021; and

- $530 million cash used for the payment of dividends in 2022 compared to $482 million in 2021; partially offset by
- $595 million net proceeds from the issuance of $600 million of 5.6% senior notes due 2032 in the second quarter of 2022, which was subsequently used to repurchase $275 million principal amount of our 4.0% senior notes due 2024 for a purchase price of $279 million, excluding $3 million of accrued interest.

The decrease in cash used for financing activities in 2021 compared to cash used for financing activities in 2020 was driven by:

- $844 million net proceeds from the issuance of $850 million of 2.75% senior notes due 2031 in the second quarter of 2021, which was subsequently used to repurchase $324 million principal amount of our 3.5% senior notes due 2023 for a purchase price of $341 million, excluding $3 million of accrued interest; and
- $528 million used for purchases under our share repurchase program in 2021 compared to $612 million in 2020; partially offset by
- $482 million cash used for the payment of dividends in 2021 compared to $436 million in 2020.

Sales of Receivables

We may choose to sell accounts receivable and long-term receivables to third-parties under one-time arrangements. We may or may not retain the obligation to service the sold accounts receivable and long-term receivables.

The following table summarizes the proceeds received from sales of accounts receivable and long-term receivables for the years ended December 31, 2022, 2021, and 2020:

Years ended December 31	**2022**	2021	2020
Contract-specific discounting facility	**49**	$ 211	$ 228
Accounts receivable sales proceeds	**179**	56	74
Long-term receivables sales proceeds	**204**	248	181
Total proceeds from receivable sales	**$ 432**	$ 515	$ 483

During the year ended December 31, 2022, we utilized and fully repaid a cost-efficient receivable discounting facility, implemented in 2020, to neutralize the impact of increased payment terms under a renegotiated and extended long-term contract in Europe. Both the proceeds and repayment of our receivable sales are included in "Operating Activities" within our Consolidated Statements of Cash Flows.

At December 31, 2022, the Company had retained servicing obligations for $891 million of long-term receivables, compared to $940 million of long-term receivables at December 31, 2021. Servicing obligations are limited to collection activities related to the sales of accounts receivables and long-term receivables.

Debt

We had outstanding long-term debt of $6.0 billion and $5.7 billion, including the current portions of $1 million and $5 million, at December 31, 2022 and December 31, 2021, respectively.

On September 5, 2019, we entered into an agreement with Silver Lake Partners to issue $1.0 billion of 1.75% senior convertible notes which mature in September 2024 (the "Senior Convertible Notes"). Interest on these notes is payable semiannually. The Senior Notes became fully convertible on September 5, 2021. The notes are convertible based on a conversion rate of 4.9140 per $1,000 principal amount (which is equal to an initial conversion price of $203.50 per share), adjusted for dividends declared through the date of settlement. We adopted ASU No. 2020-06 on January 1, 2022, using the modified retrospective method of adoption. As a result of the adoption of this ASU, the Senior Convertible Notes are accounted as a single liability measured at its amortized cost, given the embedded conversion feature does not require bifurcation and recognition as a derivative. Upon adoption of this ASU, amounts previously recognized in additional paid-in capital from the original embedded conversion feature of $10 million were reclassified to retained earnings. Refer to "Note 1: Summary of Accounting Policies" in this “Part II. Item 8. Financial Statements and Supplementary Data” of this Form 10-K for a further discussion regarding the effect of the adoption of ASU 2020-06.

In August of 2020, we issued $900 million of 2.30% senior notes due 2030. We recognized net proceeds of $892 million after debt issuance costs and debt discounts. A portion of these proceeds were then used to redeem $552 million in principal amount outstanding of the 3.75% senior notes due 2022 for a redemption price of $582 million, excluding $7 million of accrued interest. The remaining proceeds were used to repurchase $293 million in principal amount outstanding of our long-term debt under a tender offer, for a purchase price of $315 million, excluding $5 million of accrued interest. After accelerating the amortization of debt issuance costs and debt discounts, we recognized a loss of $56 million related to the redemption and the repurchase in Other, net within Other income (expense) in our Consolidated Statements of Operations.

In May of 2021, we issued $850 million of 2.75% senior notes due 2031. We recognized net proceeds of $844 million after debt issuance costs. A portion of these proceeds was then used to redeem $324 million in principal amount of our outstanding long-term debt for a purchase price of $341 million, excluding $3 million of accrued interest. After accelerating the amortization of debt issuance costs, we recognized a loss of $18 million related to the redemption in Other, net within Other income (expense) in our Consolidated Statements of Operations.

In May of 2022, we issued $600 million of 5.6% senior notes due 2032. We recognized net proceeds of $595 million after debt issuance costs and discounts. A portion of these proceeds was then used to repurchase $275 million in principal amount of the Company's 4.0% senior notes due 2024 pursuant to a cash tender offer, for a purchase price of $279 million, excluding $3 million of accrued interest. After accelerating the amortization of debt discounts and debt issuance costs, we recognized a loss of $6 million related to the tender offer in Other, net within Other income (expense) in our Consolidated Statements of Operations.

We have an unsecured commercial paper program, backed by the revolving credit facility described below, under which we may issue unsecured commercial paper notes up to a maximum aggregate principal amount of $2.2 billion outstanding at any one time. At maturity, the notes are paid back in full including the interest component. The notes are not redeemable prior to maturity. As of December 31, 2022, we had no outstanding debt under the commercial paper program.

Credit Facilities

As of December 31, 2022, we had a $2.25 billion syndicated, unsecured revolving credit facility scheduled to mature in March 2026 (the "2021 Motorola Solutions Credit Agreement"). The 2021 Motorola Solutions Credit Agreement includes a letter of credit sub-limit and fronting commitments of $450 million. An annual facility fee is payable on the undrawn amount of the credit line. The interest rate and facility fee are subject to adjustment if our credit rating changes. We must comply with certain customary covenants including a maximum leverage ratio, as defined in the 2021 Motorola Solutions Credit Agreement. We were in compliance with our financial covenants as of December 31, 2022. Subsequent to year end, on February 8, 2023, we entered into an amendment to the 2021 Motorola Solutions Credit Agreement to replace the interest rate benchmark from London Interbank Offered Rate (LIBOR) to the Secured Overnight Financing Rate (SOFR).

Share Repurchase Program

Through a series of actions, the Board of Directors has authorized an aggregate share repurchase amount of up to $16.0 billion of our outstanding shares of common stock (the “share repurchase program”). The share repurchase program does not have an expiration date. As of December 31, 2022, we used approximately $14.7 billion of the share repurchase authority, including transaction costs, to repurchase shares, leaving approximately $1.3 billion of authority available for future repurchases.

Our share repurchases, including transaction costs, for 2022, 2021, and 2020 are summarized as follows:

Year	*Shares Repurchased (in millions)*	*Average Price*	*Amount (in millions)*
2022	3.7	$ 225.00	$ 836
2021	2.5	208.41	528
2020	3.9	155.93	612

Dividends

We paid cash dividends to holders of our common stock of $530 million in 2022, $482 million in 2021, and $436 million in 2020. On January 13, 2023, we paid an additional $148 million in cash dividends to holders of our common stock.

Adequate Internal Funding Resources

We believe that we have adequate internal resources available to generate adequate amounts of cash to meet our expected working capital, capital expenditure and cash requirements for the next twelve months and the foreseeable future, as supported by the level of cash and cash equivalents in the U.S., the ability to repatriate funds from foreign jurisdictions, cash provided by operations, as well as liquidity provided by our commercial paper program backed by the 2021 Motorola Solutions Credit Agreement.

We do not anticipate a material decrease to net future cash flows generated from operations. We expect to use our available cash, investments, and debt facilities to support and invest in our business. This includes investing in our existing products and technologies, seeking new acquisition opportunities related to our strategic growth initiatives and returning cash to shareholders through common stock cash dividend payments (subject to the discretion of our Board of Directors) and share repurchases. Refer also to “Macroeconomic Events” of this section of Form 10-K for a discussion of the impact of macroeconomic events on our liquidity, as well as "Part I. Item 1A. Risk Factors" for further discussion regarding access to the capital markets.

Material Cash Requirements from Contractual and Other Obligations

Summarized in the table and text below are our short-term (within the next twelve months) and long-term material cash requirements as of December 31, 2022, which we expect to fund with a combination of operating cash flows, existing cash balances or, as needed, borrowings under new or existing debt:

	Payments Due by Period	
(in millions)	*Short-term*	*Long-term*
Long-term debt obligations, gross[1]	$ 1	$ 6,061
Lease obligations[2]	137	456
Purchase obligations[3]	131	175
Total obligations	$ 269	$ 6,692

[1]Amounts included represent the estimated principal payments applicable to outstanding debt. Refer to "Note 5: Debt and Credit Facilities" in "Part II. Item 8. Financial Statements and Supplementary Data" of this Form 10-K for discussion related to our long-term debt obligations.

[2]We lease certain office, factory and warehouse space, land, and other equipment, principally under non-cancelable operating leases. We are evaluating our real estate needs in order to identify opportunities to reduce long-term cash requirements for office space where practicable. Refer to "Note 3: Leases" to our consolidated financial statements in "Part II. Item 8. Financial Statements and Supplementary Data" of this Form 10-K for further discussion of these material lease obligations.

[3]Amounts included represent firm, non-cancelable commitments. Such commitments include license agreements and agreements with contract manufacturers and suppliers that either allow them to procure inventory based upon criteria as defined by us or establish the parameters defining our requirements. We do not anticipate the cancellation of any of our take-or-pay agreements in the future and estimate that purchases from these suppliers will exceed the minimum obligations during the agreement periods.

Other Contingencies

Potential Contractual Damage Claims in Excess of Underlying Contract Value: In certain circumstances, we enter into contracts with customers pursuant to which the damages that could be claimed by the customer for failed performance might exceed the revenue we receive from the contract. Contracts with these types of uncapped damages provisions are fairly rare, but individual contracts could still represent meaningful risk. There is a possibility that a claim by a counterparty to one of these contracts could result in expenses that are far in excess of the revenue received from the counterparty in connection with the contract.

Indemnification Provisions: We may provide indemnifications for losses that result from the breach of general warranties contained in certain commercial and intellectual property agreements. Historically, we have not made significant payments under these agreements, nor have there been significant claims asserted against us. However, there is an increasing risk in relation to intellectual property indemnities given the current legal climate. In indemnification cases, payment by us is conditioned on the other party making a claim pursuant to the procedures specified in the particular contract, which procedures typically allow us to challenge the other party's claims. In some instances we may have recourse against third-parties for certain payments made by us.

Legal Matters: We are a defendant in various lawsuits, claims, and actions, which arise in the normal course of business. In the opinion of management, the ultimate disposition of these matters will not have a material adverse effect on our consolidated financial position or liquidity. However, an unfavorable resolution could have a material adverse effect on our results of operations in the periods in which the matters are ultimately resolved, or in the periods in which more information is obtained that changes management's opinion of the ultimate disposition.

Long-term Customer Financing Commitments

Outstanding Commitments: Certain purchasers of our products and services may request that we provide long-term financing (defined as financing with a term of greater than one year) in connection with the sale of equipment. These requests may include all or a portion of the purchase price of the products and services. Our obligation to provide long-term financing may be conditioned on the issuance of a letter of credit in favor of us by a reputable bank to support the purchaser's credit or a pre-existing commitment from a reputable bank to purchase the long-term receivables from us. We had outstanding commitments to provide long-term financing to third-parties totaling $65 million at December 31, 2022 and $56 million at December 31, 2021.

Critical Accounting Estimates

This Management's Discussion and Analysis of Financial Condition and Results of Operations discusses our consolidated financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles ("GAAP"). The preparation of these financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported amounts of revenues and expenses during the reporting period.

Management bases its estimates and judgments on historical experience, current economic and industry conditions and on various other factors that are believed to be reasonable under the circumstances. This forms the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. The Company believes that the following discussion addresses the Company's most critical accounting estimates, which are those that are most important to the portrayal of the Company's financial condition and results of operations and require management's most difficult, subjective and complex judgments.

Revenue Recognition

We enter into arrangements which consist of multiple promises to our customers. We evaluate whether the promised goods and services are distinct or a series of distinct goods or services. Where contracts contain multiple performance obligations, we generally allocate the total estimated consideration to each performance obligation based on applying an estimated selling price ("ESP") as our best estimate of standalone selling price. We determine ESP by: (i) collecting all reasonably available data points including sales, cost and margin analyses of the product or services, and other inputs based on our normal pricing and discounting practices, (ii) making any reasonably required adjustments to the data based on market and Company-specific factors, and (iii) stratifying the data points, when appropriate, based on major product or service, type of customer, geographic market, and sales volume.

We account for certain system contracts on an over-time basis, electing an input method of estimated costs as a measure of performance completed. The selection of the measurement of progress using estimated costs was based on a thorough consideration of alternatives of various output and input measures, including contract milestones and labor hours. However, we have determined that other input and output measures are not an appropriate measure of progress as they do not accurately align with the transfer of control on our customized systems. The selection of costs incurred as a measure of progress aligns the transfer of control to the overall production of the customized system.

For system contracts accounted for over time using estimated costs as a measure of performance completed, we rely on estimates around the total estimated costs to complete the contract ("Estimated Costs at Completion"). Total Estimated Costs at Completion include direct labor, material and subcontracting costs. Due to the nature of the efforts required to be performed to meet the underlying performance obligation, determining Estimated Costs at Completion may be complex and subject to many variables. We have a standard and disciplined quarterly process in which management reviews the progress and performance of open contracts in order to determine the best estimate of Estimated Costs at Completion. As part of this process, management reviews information including, but not limited to, any outstanding key contract matters, progress towards completion, the project schedule, identified risks and opportunities, and the related changes in estimates of costs. The risks and opportunities include management's judgment about the ability and cost to achieve the project schedule, technical requirements, and other contract requirements. Management must make assumptions and estimates regarding labor productivity and availability, the complexity of work to be performed, the availability and cost of materials, and performance by subcontractors, among other variables. Based on this analysis, any adjustment to net sales, cost of sales, and the related impact to operating income are recorded as necessary in the period they become known. When estimates of total costs to be incurred on a contract exceed estimates of total revenue to be earned, a provision for the entire loss on the contract is recorded in the period in which the loss is determined.

Retirement Benefits

Our benefit obligations and net periodic pension costs (benefits) associated with our domestic noncontributory pension plans ("U.S. Pension Benefit Plans"), our foreign noncontributory pension plans ("Non-U.S. Plans"), as well as our domestic postretirement health care plan ("Postretirement Health Care Benefits Plan"), are determined using actuarial assumptions. The assumptions are based on management's best estimates, after consulting with outside investment advisors and actuaries.

Accounting methodologies use an attribution approach that generally spreads the effects of individual events over the service lives of the participants in the plan, or estimated average lifetime when almost all of the plan participants are considered "inactive." Examples of "events" are plan amendments and changes in actuarial assumptions such as discount rate, expected long-term rate of return on plan assets, and rate of compensation increases.

There are various assumptions used in calculating the net periodic costs (benefits) and related benefit obligations. One of these assumptions is the expected long-term rate of return on plan assets. The required use of the expected long-term rate of return on plan assets may result in recognized pension income that is greater or less than the actual returns of those plan assets in any given year. Over time, however, the expected long-term returns are designed to approximate the actual long-term returns. We use a five-year, market-related asset value method of recognizing asset related gains and losses.

We use long-term historical actual return experience with consideration of the expected investment mix of the plans' assets, as well as future estimates of long-term investment returns, to develop our expected rate of return assumption used in calculating the net periodic pension cost (benefit) and the net postretirement health care benefit. Our investment return assumption for the U.S. Pension Benefit Plans was 6.76% in 2022 and 6.75% in 2021. Our investment return assumption for the Postretirement Health Care Benefits Plan was 6.90% in 2022 and 6.75% in 2021. Our weighted average investment return assumption for the Non-U.S. Plans was 4.78% in 2022 and 4.54% in 2021. For the U.S. Pension Benefit Plans, a 25 bps increase in expected return on plan assets would result in $9 million of additional net periodic pension benefit and a 25 bps decrease would result in a $9 million reduction in net periodic pension benefit. The impact of a similar increase or decrease on the Non-U.S. Plans and the Postretirement Health Care Benefits Plan would be de minimis.

A second key assumption is the discount rate. The discount rate assumptions used for the U.S. Pension Benefit Plans, the Non-U.S. Plans and the Postretirement Health Care Benefits Plan reflect, at December 31 of each year, the prevailing market rates for high-quality, fixed-income debt instruments that, if the obligation was settled at the measurement date, would provide the necessary future cash flows to pay the benefit obligation when due. Our discount rates for measuring our U.S. Pension Benefit Plan obligations were 5.20% and 2.98% at December 31, 2022 and 2021, respectively. Our weighted average discount rates for measuring our Non-U.S. Plans were 4.6% and 1.82% at December 31, 2022 and 2021, respectively. Our discount rates for measuring the Postretirement Health Care Benefits Plan obligation were 5.10% and 2.78% at December 31, 2022 and 2021, respectively.

A change in our discount rate on the Postretirement Health Care Benefits Plan would be de minimis. The effects of a change in the discount rate on the projected benefit obligation for both the U.S. and Non-U.S. Pension Benefit Plans are as follows:

		2022 Projected Benefit Obligation Increase / (Decrease)	
(in millions)		*U.S. Pension Benefit Plans*	*Non-U.S. Pension Benefit Plans*
Discount rate	25 bps increase	$ (111)	$ (3)
	25 bps decrease	117	3

Under relevant accounting rules, when almost all of the plan participants are considered inactive, the amortization period for certain unrecognized losses changes from the average remaining service period to the average remaining lifetime of the participant. As such, depending on the specific plan, we amortize gains and losses over periods ranging from nine to twenty-seven years. Prior service costs are being amortized over periods ranging from one to seventeen years. Benefits under all pension plans are valued based on the projected unit credit cost method.

Valuation and Recoverability of Goodwill

We assess the recorded amount of goodwill for recovery on an annual basis as of the last day of the third quarter of each fiscal year. Goodwill is assessed more frequently if an event occurs or circumstances change that would indicate it is more-likely-than-not that the fair value of a reporting unit is below its carrying amount. We continually assess whether any such events and circumstances have occurred, which requires a significant amount of judgment. Such events and circumstances may include: (i) adverse changes in macroeconomic conditions, (ii) adverse changes in the industry or market in which we transact, (iii) changes in cost factors negatively impacting earnings and cash flows, (iv) negative or declining overall financial performance, (v) events affecting the carrying value or composition of a reporting unit, or (vi) a sustained decrease in share price, among others. Any such adverse event or change in circumstances could have a significant impact on the recoverability of goodwill and could have a material impact on our consolidated financial statements.

The goodwill impairment assessment is performed at the reporting unit level. A reporting unit is an operating segment or one level below an operating segment (referred to as a “component”). A component of an operating segment is a reporting unit if the component constitutes a business for which discrete financial information is available and segment management regularly reviews the operating results of that component. When two or more components of an operating segment have similar economic characteristics, the components are aggregated and deemed a single reporting unit. An operating segment is deemed to be a reporting unit if all of its components are similar, if none of its components is a reporting unit, or if the segment comprises only a single component. Based on this guidance, we have determined that our Products and Systems Integration and Software and Services segments are comprised of three and two reporting units, respectively.

In the fiscal year 2022, we elected to perform a quantitative assessment of goodwill for impairment. The quantitative assessment involved the assignment of assets and liabilities to each of our reporting units and an assessment of the fair value of each of our reporting units. We utilized an income approach (discounted cash flows) to estimate the fair value of each reporting unit which was corroborated by market multiples when available and as appropriate. Key assumptions in the quantitative analysis included revenue growth rates (including long-term growth rates for terminal value assumptions), operating margin estimates, discount rates, and where applicable, the comparable multiples from publicly traded companies in our industry. The quantitative test indicated all reporting units had fair values in excess of their carrying values, and no impairment of goodwill was identified as a result of our annual testing conducted in 2022.

We performed a qualitative assessment to determine whether it was more-likely-than-not that the fair value of each reporting unit was less than its carrying amount for the fiscal years 2021 and 2020. In performing this qualitative assessment we assessed relevant events and circumstances including macroeconomic conditions, industry and market conditions, cost factors, overall financial performance, changes in enterprise value and entity-specific events. For fiscal years 2021 and 2020, we concluded it was more-likely-than-not that the fair value of each reporting unit exceeded its carrying value.

Valuation of Deferred Tax Assets and Liabilities

We use the asset and liability method of accounting for income taxes. Under this method, income tax expense is recognized for the amount of taxes payable or refundable for the current year. In addition, deferred tax assets and liabilities are recognized for the expected future tax consequences of temporary differences between the financial reporting and tax bases of assets and liabilities, and for operating losses and tax credit carryforwards. Management makes assumptions, judgments and estimates to determine our current and deferred tax provision and also the deferred tax assets and liabilities. We evaluate our deferred tax assets quarterly to determine if adjustments to our valuation allowance are required based on the consideration of all available positive and negative evidence.

Our assumptions, judgments and estimates for computing the income tax provision takes into account current tax laws, our interpretation of current tax law and possible outcomes of current and future audits conducted by foreign and domestic tax authorities. We believe such estimates to be reasonable; however, the final determination of certain audits could significantly impact the amounts provided for income taxes in our financial statements.

Recent Accounting Pronouncements

See “Note 1: Summary of Significant Accounting Policies” to our consolidated financial statements in “Part II. Item 8: Financial Statements and Supplementary Data” of this Form 10-K.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Interest Rate Risk

Our exposure to market risk for changes in interest rates relates primarily to our long-term debt as interest rate fluctuations impact the fair value of our long-term debt. As of December 31, 2022, we had $6.0 billion of long-term debt, including the current portion, which is primarily priced at long-term, fixed interest rates. A hypothetical 10% decrease in interest rates as of the end of 2022 would have increased the fair value of our debt by approximately $118 million at December 31, 2022. See "Note 5: Debt and Credit Facilities" to the consolidated financial statements included in “Part II. Item 8. Financial Statements and Supplementary Data” of this Form 10-K for more information on our long-term debt.

Foreign Currency Risk

We are exposed to foreign currency risk as a result of buying and selling in various currencies, our net investments in foreign entities, and monetary assets and liabilities denominated in a currency other than the functional currency of the legal entity holding the instrument. We use financial instruments to reduce our overall exposure to the effects of currency fluctuations on cash flows. Our policy prohibits speculation in financial instruments for profit on exchange rate price fluctuations, trading in currencies for which there are no underlying exposures, or entering into transactions for any currency to intentionally increase the underlying exposure.

Our strategy related to foreign exchange exposure management is to offset the gains or losses on the financial instruments against losses or gains on the underlying operational cash flows, net investments or monetary assets and liabilities based on our assessment of risk. We enter into derivative contracts for some of our non-functional currency cash, receivables, and payables, which are primarily denominated in major currencies that can be traded on open markets. Our policy permits us to use forward contracts and options to hedge these currency exposures. In addition, we enter into derivative contracts for some forecasted transactions or net investments in some of our overseas entities, which are designated as part of a hedging relationship if it is determined that the transaction qualifies for hedge accounting under the provisions of the authoritative accounting guidance for derivative instruments and hedging activities. A portion of our exposure is from currencies that are not traded in liquid markets and these are addressed, to the extent reasonably possible, by managing net asset positions, product pricing and component sourcing.

We had outstanding foreign exchange contracts totaling $1.1 billion at the end of each of December 31, 2022 and 2021. Management does not believe these financial instruments should subject it to undue risk due to foreign exchange movements because gains and losses on these contracts should generally offset gains and losses on the underlying assets, liabilities and transactions.

The following table shows the five largest net notional amounts of the positions to buy or sell foreign currency as of December 31, 2022 and the corresponding positions as of December 31, 2021:

	Notional Amount	
Net Buy (Sell) by Currency	**2022**	2021
British pound	**$ 290**	$ 128
Euro	**185**	164
Australian dollar	**(130)**	(76)
Chinese renminbi	**(61)**	(89)
Brazilian real	**(44)**	(23)

Foreign exchange financial instruments that are subject to the effects of currency fluctuations, which may affect reported earnings, include derivative financial instruments and other monetary assets and liabilities denominated in a currency other than the functional currency of the legal entity holding the instrument. Currently, our derivative financial instruments consist primarily of currency forward contracts. Other monetary assets and liabilities denominated in a currency other than the functional currency of the legal entity consist primarily of cash, cash equivalents, accounts payable and accounts receivable. Assuming the amounts of the outstanding foreign exchange contracts represent our underlying foreign exchange risk related to monetary assets and liabilities, a hypothetical unfavorable 10% movement in the foreign exchange rates at December 31, 2022 would reduce the value of those monetary assets and liabilities by approximately $76 million. Our market risk calculation represents an estimate of reasonably possible net losses that would be recognized assuming hypothetical 10% movements in future currency market pricing and is not necessarily indicative of actual results, which may or may not occur. It does not represent the maximum possible loss or any expected loss that may occur, since actual future gains and losses will differ from those estimated, based upon, among other things, actual fluctuation in market rates, operating exposures, and the timing thereof. We believe, however, that any such loss incurred would be offset by the effects of market rate movements on the respective underlying derivative financial instruments transactions.

Item 8: Financial Statements and Supplementary Data

Index to Consolidated Financial Statements

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Motorola Solutions, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Motorola Solutions, Inc. and its subsidiaries (the "Company") as of December 31, 2022 and 2021, and the related consolidated statements of operations, of comprehensive income (loss), of stockholders' equity (deficit) and of cash flows for each of the three years in the period ended December 31, 2022, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022 in conformity with 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 December 31, 2022, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control Over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

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

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

Definition and Limitations of Internal Control over Financial Reporting

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

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

Critical Audit Matters

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

Revenue Recognition - Estimated Costs to Complete System Contracts

As described in Note 1 to the consolidated financial statements, $1.8 billion of the Company’s total revenues for the year ended December 31, 2022 was generated from System contracts. The Company recognizes revenue on a significant portion of System contracts on an over-time basis, electing an input method of estimated costs as a measure of performance completed. For contracts accounted for over-time using estimated costs as a measure of performance completed, the Company relies on estimates of the total estimated costs to complete the contract (“Estimated Costs at Completion”). Total Estimated Costs at Completion include direct labor, material and subcontracting costs. Due to the nature of the efforts required to meet the underlying performance obligation, determining Estimated Costs at Completion may be complex and subject to many variables. As disclosed by management, management reviews the progress and performance of open contracts in order to determine the best estimate of Estimated Costs at Completion. As part of this process, management reviews information including, but not limited to, any outstanding key contract matters, progress towards completion, the project schedule, identified risks and opportunities, and the related changes in estimates of costs. The risks and opportunities include management’s judgments about the ability and the cost to achieve the project schedule, technical requirements, and other contract requirements.

The principal considerations for our determination that performing procedures relating to the estimated costs to complete system contracts is a critical audit matter are the significant judgments by management when developing the Estimated Costs at Completion, which in turn led to a high degree of auditor judgment, subjectivity and effort in performing procedures to evaluate management’s estimates related to management’s judgments about the cost to achieve the project schedule, technical requirements, and other contract requirements.

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 controls over the determination of Estimated Costs at Completion. These procedures also included, among others, evaluating and testing management’s process for determining the Estimated Costs at Completion for a sample of contracts. Management’s process for determining the Estimated Costs at Completion was evaluated for reasonableness by (i) performing a comparison of the originally estimated and actual costs incurred on completed contracts; (ii) evaluating the timely identification of circumstances that may warrant a modification to Estimated Costs at Completion; and (iii) analyzing contracts and project schedules that support those estimates.

/s/ PricewaterhouseCoopers LLP
Chicago, Illinois
February 16, 2023

We have served as the Company’s auditor since 2018.

Consolidated Statements of Operations

(In millions, except per share amounts)	*Years ended December 31* **2022**	2021	2020
Net sales from products	**$ 5,368**	$ 4,606	$ 4,087
Net sales from services	**3,744**	3,565	3,327
Net sales	**9,112**	8,171	7,414
Costs of products sales	**2,595**	2,104	1,872
Costs of services sales	**2,288**	2,027	1,934
Costs of sales	**4,883**	4,131	3,806
Gross margin	**4,229**	4,040	3,608
Selling, general and administrative expenses	**1,450**	1,353	1,293
Research and development expenditures	**779**	734	686
Other charges	**339**	286	246
Operating earnings	**1,661**	1,667	1,383
Other income (expense):			
Interest expense, net	**(226)**	(208)	(220)
Gains (losses) on sales of investments and businesses, net	**3**	1	(2)
Other, net	**77**	92	13
Total other expense	**(146)**	(115)	(209)
Net earnings before income taxes	**1,515**	1,552	1,174
Income tax expense	**148**	302	221
Net earnings	**1,367**	1,250	953
Less: Earnings attributable to noncontrolling interests	**4**	5	4
Net earnings attributable to Motorola Solutions, Inc.	**$ 1,363**	$ 1,245	$ 949
Earnings per common share:			
Basic:	**$ 8.14**	$ 7.36	$ 5.58
Diluted:	**7.93**	7.17	5.45
Weighted average common shares outstanding:			
Basic	**167.5**	169.2	170.0
Diluted	**171.9**	173.6	174.1
Dividends declared per share	**$ 3.25**	$ 2.92	$ 2.63

See accompanying notes to consolidated financial statements.

Consolidated Statements of Comprehensive Income (Loss)

	Years ended December 31		
(In millions)	**2022**	2021	2020
Net earnings	**$ 1,367**	$ 1,250	$ 953
Other comprehensive income (loss), net of tax (Note 4):			
Foreign currency translation adjustments	**(155)**	(24)	50
Defined benefit plans	**(1)**	91	(56)
Total other comprehensive income (loss), net of tax	**(156)**	67	(6)
Comprehensive income	**1,211**	1,317	947
Less: Earnings attributable to noncontrolling interests	**4**	5	4
Comprehensive income attributable to Motorola Solutions, Inc.	**$ 1,207**	$ 1,312	$ 943

See accompanying notes to consolidated financial statements.

Consolidated Balance Sheets

(In millions, except par value)	*December 31* 2022	2021
ASSETS		
Cash and cash equivalents	**$ 1,325**	$ 1,874
Accounts receivable, net	**1,518**	1,386
Contract assets	**974**	1,105
Inventories, net	**1,055**	788
Other current assets	**383**	259
Total current assets	**5,255**	5,412
Property, plant and equipment, net	**927**	1,042
Operating lease assets	**485**	382
Investments	**147**	209
Deferred income taxes	**1,036**	916
Goodwill	**3,312**	2,565
Intangible assets, net	**1,342**	1,105
Other assets	**310**	558
Total assets	**$ 12,814**	$ 12,189
LIABILITIES AND STOCKHOLDERS' EQUITY (DEFICIT)		
Current portion of long-term debt	**$ 1**	$ 5
Accounts payable	**1,062**	851
Contract liabilities	**1,859**	1,650
Accrued liabilities	**1,638**	1,557
Total current liabilities	**4,560**	4,063
Long-term debt	**6,013**	5,688
Operating lease liabilities	**419**	313
Other liabilities	**1,691**	2,148
Preferred stock, $100 par value: 0.5 shares authorized; none issued and outstanding	**—**	—
Common stock, $0.01 par value:	**2**	2
Authorized shares: 600.0		
Issued shares: 12/31/22—168.5; 12/31/21—169.6		
Outstanding shares: 12/31/22—167.5; 12/31/21—168.7		
Additional paid-in capital	**1,306**	987
Retained earnings	**1,343**	1,350
Accumulated other comprehensive loss	**(2,535)**	(2,379)
Total Motorola Solutions, Inc. stockholders' equity (deficit)	**116**	(40)
Noncontrolling interests	**15**	17
Total stockholders' equity (deficit)	**131**	(23)
Total liabilities and stockholders' equity (deficit)	**$ 12,814**	$ 12,189

See accompanying notes to consolidated financial statements.

Consolidated Statements of Stockholders' Equity (Deficit)

(In millions)	*Shares*		*Common Stock and Additional Paid-in Capital*		*Accumulated Other Comprehensive Income (Loss)*		*Retained Earnings*		*Noncontrolling Interests*
Balance as of January 1, 2020	**171.0**	**$**	**501**	**$**	**(2,440)**	**$**	**1,239**	**$**	**17**
Net earnings							949		4
Other comprehensive loss					(6)				
Issuance of common stock and stock options exercised	3.1		131						
Share repurchase program	(3.9)						(612)		
Share-based compensation expenses			129						
Dividends paid to noncontrolling interest in subsidiary common stock									(4)
Dividends declared							(449)		
Balance as of December 31, 2020	**170.2**	**$**	**761**	**$**	**(2,446)**	**$**	**1,127**	**$**	**17**
Net earnings							1,245		5
Other comprehensive income					67				
Issuance of common stock and stock options exercised	1.9		99						
Share repurchase program	(2.5)						(528)		
Share-based compensation expenses			129						
Dividends paid to noncontrolling interest in subsidiary common stock									(5)
Dividends declared							(494)		
Balance as of December 31, 2021	**169.6**	**$**	**989**	**$**	**(2,379)**	**$**	**1,350**	**$**	**17**
Net earnings							1,363		4
Other comprehensive loss					(156)				
Issuance of common stock and stock options exercised	2.6		157						
Share repurchase program	(3.7)						(836)		
Share-based compensation expenses			172						
Dividends paid to noncontrolling interest in subsidiary common stock									(6)
Dividends declared							(544)		
ASU 2020-06 modified retrospective adoption			(10)				10		
Balance as of December 31, 2022	**168.5**	**$**	**1,308**	**$**	**(2,535)**	**$**	**1,343**	**$**	**15**

See accompanying notes to consolidated financial statements.

Consolidated Statements of Cash Flows

(In millions)	Years ended December 31 2022	2021	2020
Operating			
Net earnings	**$ 1,367**	$ 1,250	$ 953
Adjustments to reconcile Net earnings to Net cash provided by operating activities:			
Depreciation and amortization	**440**	438	409
Non-cash other charges (income)	**23**	3	(13)
Loss on ESN fixed asset impairment	**147**	—	—
Share-based compensation expense	**172**	129	129
Loss (gains) on sales of investments and businesses, net	**(3)**	(1)	2
Losses from the extinguishment of long-term debt	**6**	18	56
Changes in assets and liabilities, net of effects of acquisitions, dispositions, and foreign currency translation adjustments:			
Accounts receivable	**(112)**	3	90
Inventories	**(242)**	(284)	(14)
Other current assets and contract assets	**(1)**	(205)	167
Accounts payable, accrued liabilities, and contract liabilities	**451**	578	(116)
Other assets and liabilities	**(91)**	(126)	(25)
Deferred income taxes	**(334)**	34	(25)
Net cash provided by operating activities	**1,823**	1,837	1,613
Investing			
Acquisitions and investments, net	**(1,177)**	(521)	(287)
Proceeds from sales of investments	**46**	16	11
Capital expenditures	**(256)**	(243)	(217)
Proceeds from sales of property, plant and equipment	**—**	6	56
Net cash used for investing activities	**(1,387)**	(742)	(437)
Financing			
Net proceeds from issuance of debt	**595**	844	892
Repayment of debt	**(285)**	(353)	(914)
Repayment of unsecured revolving credit facility draw	**—**	—	(800)
Proceeds from unsecured revolving credit facility draw	**—**	—	800
Revolving credit facility renewal fees	**—**	(7)	—
Issuances of common stock	**156**	102	108
Purchases of common stock	**(836)**	(528)	(612)
Payment of dividends	**(530)**	(482)	(436)
Payment of dividends to noncontrolling interest	**(6)**	(5)	(4)
Net cash used for financing activities	**(906)**	(429)	(966)
Effect of exchange rate changes on cash and cash equivalents	**(79)**	(46)	43
Net increase (decrease) in cash and cash equivalents	**(549)**	620	253
Cash and cash equivalents, beginning of period	**1,874**	1,254	1,001
Cash and cash equivalents, end of period	**$ 1,325**	$ 1,874	$ 1,254
Supplemental Cash Flow Information			
Cash paid during the period for:			
Interest, net	**$ 226**	$ 207	$ 217
Income and withholding taxes, net of refunds	**$ 307**	$ 257	$ 181

See accompanying notes to consolidated financial statements.

Notes to Consolidated Financial Statements

(Dollars in millions, except as noted)

1. Summary of Significant Accounting Policies

Principles of Consolidation: The consolidated financial statements include the accounts of Motorola Solutions, Inc. (the “Company” or “Motorola Solutions”) and all controlled subsidiaries. All intercompany transactions and balances have been eliminated.

The consolidated financial statements as of December 31, 2022 and 2021 and for the years ended December 31, 2022, 2021 and 2020, include, in the opinion of management, all adjustments (consisting of normal recurring adjustments and reclassifications) necessary to present fairly the Company's consolidated financial position, results of operations, statements of comprehensive income, and statements of stockholders' equity and cash flows for all periods presented.

Use of Estimates: The preparation of financial statements in conformity with United States ("U.S.") Generally Accepted Accounting Principles ("GAAP") requires management to make certain estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting periods. Actual results could differ from those estimates.

Revenue Recognition: Net sales consist of a wide range of goods and services including the delivery of devices, systems and system integration and a full set of software and service offerings. The Company recognizes revenue to reflect the transfer of control of promised goods or services to customers in an amount that reflects the consideration to which the Company expects to be entitled in exchange for goods or services.

The Products and Systems Integration segment is comprised of devices, systems, and systems integration for our Land Mobile Radio Communication ("LMR" or "LMR Communications") and Video Security and Access Control ("Video") technologies. Direct customers of the Products and Systems Integration segment are typically government, public safety agencies, procuring at state, local, and federal levels as well as large commercial customers with secure mission-critical needs. Indirect customers are defined as customers purchasing professional and commercial radios and video security, which are primarily sold through the Company's reseller partners to an end-customer base, composed of various industries where private communications networks and video security are used to secure operations and enable a mobile workforce. Contracts with the Company's customers are typically fixed fee, with consideration measured net of associated sales taxes, and, as it relates to our direct customers, funded through government appropriations. For Products and Systems Integration sales, the Company records consideration from shipping and handling on a gross basis within Net sales.

LMR and Video devices include two-way portable and vehicle-mounted radios, fixed video cameras and accessories. Devices are considered capable of being distinct and distinct within the context of the Company's contracts. Revenue is recognized upon the transfer of control of the devices to the customer at a point in time, typically consistent with delivery under the applicable shipping terms. Devices are sold by both the direct sales force and through reseller partners. Revenue is generally recognized upon transfer of devices to reseller partners, rather than the end-customer, except for limited consignment arrangements. Provisions for returns and reseller discounts are made on a portfolio basis using historical data.

The Products and Systems Integration segment includes both customized radio networks and video security solutions, including the integration of these networks with devices, software, and applications within both LMR and Video technologies. For systems contracts, revenue for the year ended December 31, 2022 was $1.8 billion compared to $1.9 billion for the year ended December 31, 2021 and $1.8 billion for the year ended December 31, 2020. The networks include the aggregation of promises to the customer to provide i) a radio network core and central processing software, base stations, consoles, and repeaters or ii) a video security solution including video analytics, network video management hardware and software, and access control solutions. The individual promises within a radio network contract are not distinct in the context of the contract, as the Company provides a significant service of integrating and customizing the goods and services promised. The radio network represents a distinct performance obligation for which revenue is recognized over time, as the Company creates an asset with no alternative use and has an enforceable right to payment for work performed. The Company's revenue recognition over time is based on an input measure of costs incurred, which depicts the transfer of control to its customers under its contracts. Products and Systems Integration revenue for radio network systems is recognized over an average duration of approximately one to two years. Individual promises of the video security solution are capable of being distinct and distinct in the context of the contract. Video security solutions are traditionally sold through reseller partners, with contracts negotiated under fixed pricing. Revenue is recognized upon the transfer of control of the video solution to the reseller partners, typically upon shipment.

The Software and Services segment provides a full set of offerings for government, public safety and commercial communication networks. Direct customers of the Software and Services segment are typically government, public safety and first-responder agencies and municipalities. Indirect customers are commercial customers who distribute broadband push-to-talk services to a final end customer base. Contracts with our customers are typically fixed fee, with consideration measured net of associated sales taxes, and, as it relates to our direct customers, funded through government appropriations.

Software offerings primarily include Command Center and Video software and services which can be delivered either “as a service” or on-premise. Solutions delivered as a service consist of a range of promises including hosted software, technical support and the right to unspecified future software enhancements. Software is not distinct from the hosting service since the customer does not have the right to take possession of the software at any time during the term of the arrangement. The hosted software, technical support, and right to unspecified future software enhancements each represent a series of distinct services that are delivered concurrently using the same over-time method. As such, the promises are accounted for as a single performance obligation with revenue recognized on a straight-line basis.

On-premise offerings consist of multiple promises primarily including software licenses and post-contract customer support. The promises are generally each distinct and distinct within the context of the contract as the customer benefits from each promise individually without any significant integration or interrelationship between the promises. On-premise software revenue is generally recognized at the point in time when the customer can benefit from the software which generally aligns with the beginning of the license period. Revenue for post-contract customer support is recognized over time as the customer simultaneously receives and consumes the services on a straight-line basis. In certain situations when the software license is not distinct within the context of the contract, revenue for the software license is recognized over time following the transfer of control under the arrangement.

Services include a continuum of service offerings beginning with repair, technical support and maintenance. More advanced offerings include: monitoring, software updates and cybersecurity services. Managed service offerings range from partial to full operation of customer-owned or Motorola Solutions-owned networks. Services are provided across all technologies and are both distinct and capable of being distinct in the context of the contract, representing a series of recurring services that the Company stands ready to perform over the contract term. Since services contracts typically allow for customers to terminate for convenience or for non-appropriations of fiscal funding, the contract term is generally considered to be limited to a monthly or annual basis, subject to customer renewal. While contracts with customers are typically fixed fee, certain managed services contracts may be subject to variable consideration related to the achievement of service level agreement performance measurements. The Company has not historically paid significant penalties under service level agreements, and accordingly, it does not constrain its contract price. Certain contracts may also contain variable consideration driven by the number of users. Revenue is typically recognized on services over time as a series of services performed over the contract term on a straight-line basis.

The Company enters into arrangements which consist of multiple promises to our customers. The Company evaluates whether the promised goods and services are distinct or a series of distinct goods or services. Where contracts contain multiple performance obligations, the Company generally allocates the total estimated consideration to each performance obligation based on applying an estimated selling price (“ESP”) as our best estimate of standalone selling price. The Company determines ESP by: (i) collecting all reasonably available data points including sales, cost and margin analyses of the product or services, and other inputs based on its normal pricing and discounting practices, (ii) making any reasonably required adjustments to the data based on market and Company-specific factors, and (iii) stratifying the data points, when appropriate, based on major product or service, type of customer, geographic market, and sales volume.

The Company accounts for certain system contracts without an alternative use on an over-time basis, electing an input method of estimated costs as a measure of performance completed. The selection of the measurement of progress using estimated costs was based on a thorough consideration of alternatives of various output and input measures, including contract milestones and labor hours. However, the Company has determined that other input and output measures are not an appropriate measure of progress as they do not accurately align with the transfer of control on its customized systems. The selection of costs incurred as a measure of progress aligns the transfer of control to the overall production of the customized system.

For system contracts accounted for over time using estimated costs as a measure of performance completed, the Company relies on estimates around the total estimated costs to complete the contract (“Estimated Costs at Completion”). Total Estimated Costs at Completion include direct labor, material and subcontracting costs. Due to the nature of the efforts required to be performed to meet the underlying performance obligation, determining Estimated Costs at Completion may be complex and subject to many variables. The Company has a standard and disciplined quarterly process in which management reviews the progress and performance of open contracts in order to determine the best estimate of Estimated Costs at Completion. As part of this process, management reviews information including, but not limited to, any outstanding key contract matters, progress towards completion, the project schedule, identified risks and opportunities, and the related changes in estimates of costs. The risks and opportunities include management’s judgment about the ability and cost to achieve the project schedule, technical requirements, and other contract requirements. Management must make assumptions and estimates regarding labor productivity and availability, the complexity of work to be performed, the availability and cost of materials, and performance by subcontractors, among other variables. Based on this analysis, any quarterly adjustment to net sales, cost of sales, and the related impact to operating income are recorded as necessary in the period they become known. When estimates of total costs to be incurred on a contract exceed estimates of total revenue to be earned, a provision for the entire loss on the contract is recorded in the period in which the loss is determined.

Cash Equivalents: The Company considers all highly-liquid investments purchased with an original maturity of three months or less to be cash equivalents. Restricted cash was $2 million at each of December 31, 2022 and December 31, 2021.

Investments: The Company generally invests in debt and equity securities of a strategic nature.

The Company applies the equity method of accounting for equity investments if the Company has significant influence over the issuing entity. The Company’s share of the investee’s underlying net income or loss is recorded to Other, net within Other income (expense).

Equity securities with readily determinable fair values are carried at fair value with changes in fair value recorded in Other, net within Other income (expense). Equity securities without readily determinable fair values are carried at cost, less impairments, if any, and adjusted for observable price changes for the identical or a similar investment of the same issuer. The Company performs a qualitative impairment assessment to determine if such investments are impaired. The qualitative assessment considers all available information, including declines in the financial performance of the issuing entity, the issuing entity's operating environment, and general market conditions. Impairments of equity securities without readily determinable fair values are recorded to Other, net within Other income (expense).

Investments in debt securities are classified as available-for-sale and held-to-maturity on the basis of the Company's intent and ability to hold the investments. Investments classified as available-for-sale are carried at fair value with changes reflected in other comprehensive income. Any credit-related impairment is recognized through an allowance for expected credit losses, and adjusted subsequently if conditions change, with a corresponding impact in earnings. Where there is an intention or a requirement to sell an impaired available-for-sale debt security, the entire impairment is recognized in earnings with a corresponding adjustment to the amortized cost basis of the security. Investments classified as held-to-maturity are carried at amortized cost less allowance for credit losses recorded within Other, net within Other income (expense).

Inventories: Inventories are valued at the lower of cost (which approximates cost on a first-in, first-out basis) and net realizable value.

Property, Plant and Equipment: Property, plant and equipment are stated at cost less accumulated depreciation. Depreciation is recorded on a straight-line basis, based on the estimated useful lives of the assets (leasehold improvements, one to twenty years; machinery and equipment, one to fifteen years) and commences once the assets are ready for their intended use. When certain events or changes in operating conditions occur, useful lives of the assets may be adjusted or an impairment assessment may be performed on the recoverability of the carrying value.

Goodwill and Intangible Assets: Goodwill is assessed for impairment at least annually at the reporting unit, or more frequently if events or circumstances occur that would more likely than not reduce the fair value of a reporting unit below its carrying value level. The Company performs its annual assessment of goodwill for impairment as of the last day of the third quarter of each fiscal year, typically through a qualitative assessment. Indicators of impairment include: (i) macroeconomic conditions, (ii) industry and market conditions, (iii) cost factors, including product and selling, general and administrative costs, (iv) overall financial performance of the Company, (v) changes in share price, and (vi) other relevant company-specific events. If it is determined that it is more-likely-than-not that the fair value of the reporting unit is less than its carrying amount, the Company will perform a quantitative goodwill impairment test, which compares the fair value of the reporting unit to its carrying value. A quantitative assessment includes the assignment of assets and liabilities to each of the Company's reporting units and an assessment of the fair value of each of the Company's reporting units. The Company estimates the fair value of each reporting utilizing an income approach (discounted cash flows) to estimate the fair value of each reporting unit, which is corroborated by market multiples when available and as appropriate. Key assumptions in the quantitative analysis include revenue growth rates (including long-term growth rates for terminal value assumptions), operating margin estimates, discount rates, and where applicable, the comparable multiples from publicly traded companies in the Company's industry.

If the carrying amount of a reporting unit exceeds its fair value, the Company would recognize an impairment loss in an amount equal to that excess, limited to the total amount of goodwill allocated to that reporting unit.

Intangible assets are amortized on a straight line basis over their respective estimated useful lives ranging from one to twenty years. The Company has no intangible assets with indefinite useful lives.

Leases: The Company leases certain office, factory and warehouse space, land and other equipment, principally under non-cancelable operating leases.

The Company determines if an arrangement is a lease at inception of the contract. The Company's key considerations in determining whether a contract is or contains a lease include establishing whether the supplier has the ability to use other assets to fulfill its service or whether the terms of the agreement enable the Company to control the use of a dedicated asset during the contract term. In the majority of the Company's contracts where it must identify whether a lease is present, it is readily determinable that the Company controls the use of the assets and obtains substantially all of the economic benefit during the term of the contract. In those contracts where identification is not readily determinable, the Company has determined that the supplier has either the ability to use another asset to provide the service or the terms of the contract give the supplier the right to operate the asset at its discretion during the term of the contract.

Right-of-use ("ROU") assets and operating lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term at the commencement date. The Company's lease payments are typically fixed or contain fixed escalators. The Company has elected to not separate lease and non-lease components for all of its current lease categories and therefore, all consideration is included in lease payments. For the Company's leases consisting of land and other equipment (i.e. "communication network sites"), future payments are subject to variability due to changes in indices or rates. The Company values its ROU assets and lease liabilities based on the index or rate in effect at lease commencement. Future changes in the indices or rates are accounted for as variable lease costs. Other variable lease costs include items that are not fixed at lease commencement including property taxes, insurance, and operating charges that vary based on usage. ROU assets also include lease payments made in advance and are net of lease incentives.

As the majority of the Company's leases do not provide an implicit rate, the Company uses its incremental borrowing rates based on the information available at the commencement date in determining the present value of future payments. The Company's incremental borrowing rates are based on the term of the lease, the economic environment of the lease, and the effect of collateralization.

The Company's lease terms range from one to twenty-one years and may include options to extend the lease by one to ten years or terminate the lease after the initial non-cancelable term. The Company does not include options in the determination of the lease term for the majority of leases as sufficient economic factors do not exist that would compel it to continue to use the underlying asset beyond the initial non-cancelable term. However, for the Company's communication network site leases that are necessary to provide services to customers under managed service arrangements, the Company includes options in the lease term to the extent of the customer contracts to which those leases relate.

Impairment of Long-Lived Assets: Long-lived assets, which include intangible assets, held and used by the Company are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of assets may not be recoverable. The Company evaluates recoverability of assets to be held and used by comparing the carrying amount of an asset (group) to future net undiscounted cash flows to be generated by the asset (group). If an asset (group) is considered to be impaired, the impairment to be recognized is equal to the amount by which the carrying amount of the asset (group) exceeds the asset's (group's) fair value calculated using a discounted future cash flows analysis or market comparable analysis. Assets held for sale, if any, are reported at the lower of the carrying amount or fair value less cost to sell.

Income Taxes: The Company records deferred income tax assets and liabilities based on the estimated future tax effects of differences between the financial and tax bases of assets and liabilities based on currently enacted tax laws. The Company's deferred and other tax balances are based on management's interpretation of the tax regulations and rulings in numerous tax jurisdictions. Income tax expenses and liabilities recognized by the Company also reflect its best estimates and assumptions regarding, among other things, the level of future taxable income, the effect of the Company's various tax planning strategies, and uncertain tax positions. Future tax authority rulings and changes in tax laws, changes in projected levels of taxable income, and future tax planning strategies could affect the actual effective tax rate and tax balances recorded by the Company.

Long-Term Receivables: Long-term receivables include trade receivables where contractual terms of the note agreement are greater than one year. The Company estimates credit losses on accounts receivable based on historical losses and then takes into account estimates of current and future economic conditions. Long-term receivables are considered past due if payments have not been received according to the contractual terms of the note agreement, including principal and interest. Impaired long-term receivables are valued based on the present value of expected future cash flows discounted at the receivable’s effective interest rate, or the fair value of the collateral if the receivable is collateral dependent. Interest income and late fees on impaired long-term receivables are recognized only when payments are received. Previously impaired long-term receivables are no longer considered impaired and are reclassified to performing when they have performed under restructuring for four consecutive quarters.

Environmental Liabilities: The Company maintains a liability related to ongoing remediation efforts of environmental media such as groundwater, soil, and soil vapor, as well as related legal fees for a designated Superfund site under the Comprehensive Environmental Response, Compensation and Liability Act (commonly known as the “Superfund Act”) incurred by a legacy business. It is the Company’s policy to re-evaluate the reserve when certain events become known that will impact the future cash payments. When the timing and amount of the future cash payments are fixed or reliably determinable, the Company discounts the future cash flows used in estimating the accrual using a risk-free treasury rate. The current portion of the estimated environmental liability is included in the Accrued liabilities statement line and the non-current portion is included in the Other liabilities statement line within the Company’s Consolidated Balance Sheet.

Foreign Currency: Certain non-U.S. operations within the Company use their respective local currency as their functional currency. Those operations that do not have the U.S. dollar as their functional currency translate assets and liabilities at current rates of exchange in effect at the balance sheet date and revenues and expenses using rates that approximate those in effect during the period. The resulting translation adjustments are included as a component of Accumulated other comprehensive income (loss) in the Company’s Consolidated Balance Sheet. For those operations that have transactions denominated in local currency which differs from functional currency, transactions denominated in the local currency are measured in their functional currency using the current rates of exchange for monetary assets and liabilities and historical rates of exchange for nonmonetary assets. Gains and losses from remeasurement of monetary assets and liabilities are included in Other within Other income (expense) within the Company’s Consolidated Statements of Operations.

The Company uses financial instruments to reduce its overall exposure to the effects of currency fluctuations on cash flows. The Company’s policy prohibits speculation in financial instruments for profit on exchange rate fluctuations, trading in currencies for which there are no underlying exposures, or entering into transactions for any currency to intentionally increase the underlying exposure.

The Company’s strategy related to foreign exchange exposure management is to offset the gains or losses on the financial instruments against gains or losses on the underlying operational cash flows, net investments or monetary assets and liabilities based on the Company's assessment of risk. The Company enters into derivative contracts for some of its non-functional currency cash, receivables, and payables, which are primarily denominated in major currencies that can be traded on open markets. The Company typically uses forward contracts and options to hedge these currency exposures. In addition, the Company has entered into derivative contracts for some forecasted transactions or net investments in some of its overseas entities, which are designated as part of a hedging relationship if it is determined that the transaction qualifies for hedge accounting under the provisions of the authoritative accounting guidance for derivative instruments and hedging activities. A portion of the Company’s exposure is from currencies that are not traded in liquid markets and these are addressed, to the extent reasonably possible, by managing net asset positions, product pricing and component sourcing.

Derivative Instruments: Gains and losses on hedging instruments that do not qualify for hedge accounting are recorded immediately in Other income (expense) within the Consolidated Statements of Operations. Gains and losses pertaining to instruments designated as net investment hedges that qualify for hedge accounting are recognized as a component of

Accumulated other comprehensive income. Components excluded from the assessment of hedge ineffectiveness in net investment hedges are included in Accumulated other comprehensive income at their initial value and amortized into Interest expense, net on a straight-line basis.

Fair Value Measurements: The Company holds certain fixed income securities, equity securities and derivatives, which are recognized and disclosed at fair value in the financial statements. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants as of the measurement date and is measured using the fair value hierarchy. This hierarchy prescribes valuation techniques based on whether the inputs to each measurement are observable or unobservable. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect the Company's assumptions about current market conditions. The prescribed fair value hierarchy and related valuation methodologies are as follows:

Level 1 — Quoted prices for identical instruments in active markets.

Level 2 — Quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-derived valuations, in which all significant inputs are observable, in active markets.

Level 3 — Valuations derived from valuation techniques, in which one or more significant inputs are unobservable.

Earnings Per Share: The Company calculates its basic earnings per share based on the weighted-average number of common shares issued and outstanding. Net earnings attributable to Motorola Solutions, Inc. is divided by the weighted average common shares outstanding during the period to arrive at the basic earnings per share. Diluted earnings per share is calculated by dividing net earnings attributable to Motorola Solutions, by the sum of the weighted-average number of common shares used in the basic earnings per share calculation and the weighted-average number of common shares that would be issued assuming exercise or conversion of all potentially dilutive securities, excluding those securities that would be anti-dilutive to the earnings per share calculation. Both basic and diluted earnings per share amounts are calculated for net earnings attributable to Motorola Solutions for all periods presented.

Share-Based Compensation Costs: The Company grants share-based compensation awards and offers an employee stock purchase plan. The amount of compensation cost for these share-based awards is generally measured based on the fair value of the awards as of the date that the share-based awards are issued and adjusted to the estimated number of awards that are expected to vest. The fair values of stock options and stock appreciation rights are generally determined using a Black-Scholes option pricing model which incorporates assumptions about expected volatility, risk-free rate, dividend yield, and expected life. Performance-based stock options, performance stock units, and market stock units vest based on market conditions and are therefore measured under a Monte Carlo simulation in order to simulate a range of possible future unit prices for Motorola Solutions over the performance period. Compensation cost for share-based awards is recognized on a straight-line basis over the vesting period.

Defined Benefit Plans: The Company records annual expenses relating to its defined benefit plans based on calculations which include various actuarial assumptions, including discount rates, assumed asset rates of return, compensation increases, and turnover rates. The Company reviews its actuarial assumptions on an annual basis and makes modifications to the assumptions based on current rates and trends. Under relevant accounting rules, when almost all of the plan participants are considered inactive, the amortization period for certain unrecognized gains and losses changes from the average remaining service period to the average remaining lifetime of the participants. As such, depending on the specific plan, the Company amortizes gains and losses over periods ranging from nine to twenty-seven years. Prior service costs will be amortized over periods ranging from one to seventeen years. Benefits under all pension plans are valued based on the projected unit credit cost method. The Company utilizes a five-year, market-related asset value method of recognizing asset related gains and losses.

The benefit obligation and plan assets for the Company's defined benefit plans are presented on a net basis according to the plans' net funded status and measured as of December 31, 2022.

Recent Acquisitions:

On December 14, 2022, the Company acquired Rave Mobile Safety, Inc. ("Rave Mobile"), a leader in mass notification and incident management, for $553 million, net of cash acquired. In addition, the Company issued restricted stock at a fair value of $2 million to certain key employees that will be expensed over a service period of two years. This acquisition complements the Company's portfolio with a platform specifically designed to help organizations and public safety agencies communicate and collaborate during emergencies. The business is a part of the Software and Services segment.

On October 25, 2022, the Company acquired Futurecom Systems Group, ULC ("Futurecom"), a leading provider of radio coverage extension solutions for public safety agencies, for $30 million, net of cash acquired. Futurecom designs and manufactures radio frequency repeaters. This acquisition further expands the Company's radio network and device portfolios. The business is a part of the Products and Systems Integration segment.

On August 8, 2022, the Company acquired Barrett Communications Pty Ltd ("Barrett Communications"), a global provider of specialized radio communications, for $18 million, net of cash acquired. This acquisition complements the Company's existing radio portfolio, allowing the Company to use high frequency and very high frequency radio communications to support mission-critical operations. The business is a part of the Products and Systems Integration segment.

On May 12, 2022, the Company acquired Videotec S.p.A. ("Videotec"), a global provider of ruggedized video security solutions, for $23 million, net of cash acquired. In addition, the Company issued restricted stock at a fair value of $4 million to certain key employees that will be expensed over a service period of one year. This acquisition extends the Company's breadth of high-performance video products, reinforcing the Company's strategy to be a global leader in video security solutions. The business is a part of the Products and Systems Integration segment.

On April 19, 2022, the Company acquired Calipsa, Inc. ("Calipsa"), a technology leader in cloud-native advanced video analytics, for $39 million, net of cash acquired. In addition, the Company issued restricted stock at a fair value of $4 million to certain key employees that will be expensed over a service period of two years. This acquisition extends the Company's intelligent analytics across video security solutions and supports the accelerating trend of enterprises using cloud technologies to enhance safety and security. The business is a part of the Software and Services segment.

On March 23, 2022, the Company acquired TETRA Ireland Communications Limited ("TETRA Ireland"), the provider of Ireland's National Digital Radio Service, for $120 million, net of cash acquired. The Company was an initial shareholder of TETRA Ireland and acquired the remaining interest in the entity from the other shareholders. This acquisition expands the Company's portfolio of delivering mission-critical voice and data communications solutions to first responders and frontline workers. The business is part of the Software and Services segment.

On March 3, 2022, the Company acquired Ava Security Limited ("Ava"), a global provider of cloud-native video security and analytics, for $388 million, net of cash acquired. In addition, the Company issued restricted stock and restricted stock units at a fair value of $7 million to certain key employees that will be expensed over an average service period of two years. This acquisition expands the Company's portfolio of intelligent video solutions that help to enhance safety and streamline operations. The business is a part of both the Products and Systems Integration segment and the Software and Services segment.

On December 16, 2021, the Company acquired 911 Datamaster, Inc. ("911 Datamaster"), a Next Generation 911 ("NG911") data solutions provider, for $35 million, net of cash acquired. In addition, the Company issued restricted stock at a fair value of $3 million to certain key employees that will be expensed over a service of two years. This acquisition reinforces the Company's strategy to be a leader in command center solutions and further supports 911 call centers' unique organizational workflows as they transition to NG911 technologies. The business is a part of the Software and Services segment.

On October 29, 2021, the Company acquired Envysion, Inc. ("Envysion"), a leader in enterprise video security and business analytics, for $124 million, net of cash acquired. In addition, the Company issued restricted stock at a fair value of $1 million to certain key employees that will be expensed over a service period of one year. This acquisition expands the Company's presence in the industry and reinforces the Company's strategy as a global leader in end-to-end video security solutions. The business is a part of both the Products and Systems Integration segment and the Software and Services segment.

On July 15, 2021, the Company acquired Openpath Security Inc. ("Openpath"), a cloud-based mobile access control provider for $298 million, net of cash acquired. In addition, the Company issued restricted stock at a fair value of $29 million to certain key employees that will be expensed over an average service period of three years.This acquisition expands the Company's ability to combine video security and access control solutions within Video to help support enterprise customers. The business is a part of both the Products and Systems Integration segment and the Software and Services segment.

On August 28, 2020, the Company acquired the Callyo business ("Callyo"), a cloud-based mobile applications provider for law enforcement in North America for $63 million, inclusive of share-based compensation withheld at a fair value of $3 million that will be expensed over an average service period of two years. The acquisition was settled with $61 million in cash, net of cash acquired. This acquisition adds to the Company's existing Command Center suite critical mobile technological capabilities that enable information to flow seamlessly from the field to the command center. The business is a part of the Software and Services segment.

On July 31, 2020, the Company acquired Pelco, Inc. ("Pelco"), a global provider of video security solutions for a purchase price of $110 million. The acquisition was settled with $107 million of cash, net of cash acquired. The acquisition demonstrates the Company's continued investment in Video, adding a broad range of products that can be used in a variety of commercial and industrial environments and use cases. The business is part of both the Products and Systems Integration segment and the Software and Services segment.

On June 16, 2020 the Company acquired IndigoVision Group plc ("IndigoVision") for a purchase price of $37 million. The acquisition was settled with $35 million of cash, net of cash acquired and debt assumed. The acquisition complements the Company's Video technology, providing enhanced geographical reach across a wider customer base. The business is a part of both the Products and Systems Integration segment and the Software and Services segment.

On April 30, 2020, the Company acquired a cybersecurity services business for $32 million of cash, net of cash acquired. The acquisition expands the Company's ability to assist customers with cybersecurity needs through vulnerability assessments, cybersecurity consulting, and managed services including security monitoring of network operations. The business is a part of the Software and Services segment.

On March 3, 2020, the Company acquired a cybersecurity services business for $40 million, inclusive of share-based compensation withheld at a fair value of $6 million that will be expensed over a service period of two years. The acquisition was settled with $33 million of cash, net of cash acquired. The acquisition expands the Company's ability to assist customers with cybersecurity needs through vulnerability assessments, cybersecurity consulting, managed services and remediation and response capabilities. The business is a part of the Software and Services segment.

Recent Accounting Pronouncements:

In September 2022, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2022-04, “Liabilities—Supplier Finance Programs (Subtopic 405-50): Disclosure of Supplier Finance Program Obligations,” which requires disclosures to enhance transparency about an entity’s use of supplier finance programs. The amendments require a buyer that uses supplier finance programs to disclose the program’s key terms, outstanding confirmed amounts as of the end of the period, a rollforward of such amounts during each annual period and a description of where in the financial statements outstanding amounts are presented. Only the amount outstanding at the end of the period must be disclosed in interim periods. The amendments are effective for all entities for fiscal years beginning after December 15, 2022 on a retrospective basis, including interim periods within those fiscal years, except for the requirement to disclose rollforward information, which is effective prospectively for fiscal years beginning after December 15, 2023. Early adoption is permitted upon issuance of the update. The ASU became effective for the Company on January 1, 2023, including interim periods, with early adoption permitted. The Company does not expect the adoption to have a material impact on its financial statements and disclosures.

Recently Adopted Accounting Pronouncements

In August 2020, the FASB issued ASU No. 2020-06, "Debt - Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging-Contracts in Entity’s Own Equity (Subtopic 815-40) - Accounting for Convertible Instruments and Contracts in an Entity’s Own Equity," which simplifies the accounting for certain financial instruments with characteristics of liabilities and equity, including convertible instruments. The new guidance removes the separation models for convertible debt with a cash conversion feature or a beneficial conversion feature. In addition, the new standard requires the application of the if-converted method for calculating diluted earnings per share and the treasury stock method will be no longer available. The Company adopted ASU No. 2020-06 on January 1, 2022, using the modified retrospective method of adoption. As a result of the adoption of this ASU, the Company's $1 billion of 1.75% senior convertible notes due 2024 issued to Silver Lake Partners (the "Senior Convertible Notes") are accounted as a single liability measured at its amortized cost, given the embedded conversion feature does not require bifurcation and recognition as a derivative. Upon adoption of this ASU, amounts previously recognized in additional paid-in capital from the original embedded conversion feature of $10 million were reclassified to retained earnings. The Company uses the if-converted method as required under ASU No. 2020-06 to determine the dilutive effect of the convertible instrument. Refer to Note 4, "Other Financial Data" to our consolidated financial statements included in this "Part II, Item 8. Financial Statements and Supplementary Data" of this Form 10-K for the effect of the Senior Convertible Notes on diluted earnings per common share.

In October 2021, the FASB issued ASU No. 2021-08, "Business Combinations (Topic 805) - Accounting for Contract Assets and Contract Liabilities from Contracts with Customers," which requires companies to recognize and measure contract assets and contract liabilities relating to contracts with customers that are acquired in a business combination in accordance with ASC Topic 606. Under current GAAP, an acquirer generally recognizes assets acquired and liabilities assumed in a business combination, including contract assets and contract liabilities arising from revenue contracts with customers, at fair value on the acquisition date. ASU No. 2021-08 results in the acquirer recording acquired contract assets and liabilities on the same basis that would have been recorded by the acquiree before the acquisition under ASC Topic 606. The ASU is effective for fiscal years beginning after December 15, 2022, with early adoption permitted. The Company adopted this ASU as of January 1, 2022 on a prospective basis and the adoption of this standard did not have a material impact on the Company's financial statements and disclosures. The Company anticipates that this adoption will generally result in the Company recognizing larger contract liabilities in connection with business combinations.

In November 2021, the FASB issued ASU No. 2021-10, "Government Assistance (Topic 832) – Disclosures by Business Entities about Government Assistance." This ASU requires disclosures that are expected to increase the transparency of transactions with a governmental entity accounted for by applying a grant or contribution accounting model by analogy, including disclosures around: (1) the types of transactions, (2) the accounting for those transactions, and (3) the effect of those transactions on an entity’s financial statements. The ASU was effective for the Company on January 1, 2022, including interim periods, with early adoption permitted. The Company adopted this ASU as of January 1, 2022 on a prospective basis, and the adoption of this standard did not have a material impact on the Company's financial statements and disclosures.

2. Revenue from Contracts with Customers

Disaggregation of Revenue

In January 2023, the Company began using Command Center as a naming convention, eliminating the "Software" descriptor from Command Center Software in order to inform investors that the Company has software components more broadly across all technologies; this name change does not require any financial information to be reclassified from previous periods.

The following table summarizes the disaggregation of our revenue by segment, geography, major product and service type and customer type for the years ended December 31, 2022, 2021 and 2020, consistent with the information reviewed by our chief operating decision maker for evaluating the financial performance of reportable segments:

	Years Ended								
	2022			**2021**			**2020**		
(in millions)	**Products and Systems Integration**	**Software and Services**	**Total**	Products and Systems Integration	Software and Services	Total	Products and Systems Integration	Software and Services	Total
Regions									
North America	**$ 4,286**	**$ 2,088**	**$ 6,374**	$ 3,723	$ 1,838	$ 5,561	$ 3,418	$ 1,606	$ 5,024
International	**1,442**	**1,296**	**2,738**	1,310	1,300	2,610	1,216	1,174	2,390
	$ 5,728	**$ 3,384**	**$ 9,112**	$ 5,033	$ 3,138	$ 8,171	$ 4,634	$ 2,780	$ 7,414
Major Products and Services									
LMR Communications	**$ 4,713**	**$ 2,274**	**$ 6,987**	$ 4,203	$ 2,205	$ 6,408	$ 3,992	$ 2,008	$ 6,000
Video	**1,015**	**508**	**1,523**	830	396	1,226	642	285	927
Command Center	**—**	**602**	**602**	—	537	537	—	487	487
	$ 5,728	**$ 3,384**	**$ 9,112**	$ 5,033	$ 3,138	$ 8,171	$ 4,634	$ 2,780	$ 7,414
Customer Type									
Direct	**$ 3,368**	**$ 3,057**	**$ 6,425**	$ 3,147	$ 2,842	$ 5,989	$ 2,991	$ 2,558	$ 5,549
Indirect	**2,360**	**327**	**2,687**	1,886	296	2,182	1,643	222	1,865
	$ 5,728	**$ 3,384**	**$ 9,112**	$ 5,033	$ 3,138	$ 8,171	$ 4,634	$ 2,780	$ 7,414

Remaining Performance Obligations

Remaining performance obligations represent the revenue that is expected to be recognized in future periods related to performance obligations that are unsatisfied, or partially unsatisfied, as of the end of a period. The transaction value associated with remaining performance obligations which were not yet satisfied as of December 31, 2022 was $9.5 billion. A total of $4.9 billion was from Products and Systems Integration performance obligations that were not yet satisfied, of which $2.9 billion is expected to be recognized in the next twelve months. The remaining amounts will generally be satisfied over time as systems are implemented. A total of $4.6 billion was from Software and Services performance obligations that were not yet satisfied as of December 31, 2022. The determination of Software and Services performance obligations that are not satisfied takes into account a contract term that may be limited by the customer’s ability to terminate for convenience. Where termination for convenience exists in the Company's services contracts, its disclosure of the remaining performance obligations that are unsatisfied assumes the contract term is limited until renewal. The Company expects to recognize $1.6 billion from unsatisfied Software and Services performance obligations over the next twelve months, with the remaining performance obligations to be recognized over time as services are performed and software is implemented.

Payment terms on system contracts are typically tied to implementation milestones associated with progress on contracts, while revenue recognition is over time based on a cost-to-cost method of measuring performance. The Company may recognize a Contract asset or Contract liability, depending on whether revenue has been recognized in excess of billings or billings in excess of revenue. Services contracts are typically billed in advance, generating Contract liabilities until the Company has performed the services. The Company does not record a financing component to contracts when it expects, at contract inception, that the period between the transfer of a promised good or service and related payment terms are less than a year.

Contract Balances

December 31 (in millions)		**2022**		2021		2020
Accounts receivable, net	**$**	**1,518**	$	1,386	$	1,390
Contract assets		**974**		1,105		933
Contract liabilities		**1,859**		1,650		1,554
Non-current contract liabilities		**363**		306		283

Revenue recognized during the year ended December 31, 2022 which was previously included in Contract liabilities as of January 1, 2022 was $1.1 billion, compared to $1.0 billion of revenue recognized during the year ended December 31, 2021 which was previously included in Contract liabilities as of January 1, 2021, and $946 million of revenue recognized during the year ended December 31, 2020 which was previously included in Contract liabilities as of January 1, 2020. Revenue of $26 million was reversed during the year ended December 31, 2022 related to performance obligations satisfied, or partially satisfied, in previous periods, primarily driven by changes in the estimates of progress on system contracts, compared to $4 million during the year ended December 31, 2021 and $53 million during the year ended December 31, 2020.

There have been no material expected credit losses recognized on contract assets during the year ended December 31, 2022.

Contract Cost Balances

December 31 (in millions)		**2022**		2021		2020
Current contract cost assets	**$**	**61**	$	30	$	23
Non-current contract cost assets		**130**		124		105

Contract cost assets represent incremental costs to obtain a contract, primarily related to the Company's sales incentive plans, and certain costs to fulfill contracts. Contract cost assets are amortized into expense over a period that follows the passage of control to the customer over time. Incremental costs to obtain a contract with the Company's sales incentive plans are accounted for under a portfolio approach, with amortization ranging from one year to eight years to approximate the recognition of revenues over time. Where incremental costs to obtain a contract will be recognized in one year or less, the Company applies a practical expedient around expensing amounts as incurred. Amortization of contract cost assets was $62 million for the year ended December 31, 2022, compared to $52 million as of the year ended December 31, 2021 and $49 million as of the year ended December 31, 2020.

3. Leases

The Company leases certain office, factory and warehouse space, land and other equipment, principally under non-cancelable operating leases.

Components of Lease Expense

(in millions)		**December 31, 2022**		December 31, 2021
Lease expense:				
Operating lease cost	**$**	**130**	$	133
Finance lease cost				
Amortization of right-of-use assets	**$**	**6**	$	10
Short-term lease cost	**$**	**1**	$	2
Variable cost		**33**		36
Sublease income		**(5)**		(7)
Net lease expense	**$**	**165**	$	174

Lease Assets and Liabilities

(in millions)	*Statement Line Classification*	**December 31, 2022**	December 31, 2021
Assets:			
Operating lease assets	Operating lease assets	**$ 485**	$ 382
Finance lease assets	Property, plant, and equipment, net	**9**	16
		$ 494	$ 398
Current liabilities:			
Operating lease liabilities	Accrued liabilities	**$ 118**	$ 124
Finance lease liabilities	Current portion of long-term debt	**1**	4
		$ 119	$ 128
Non-current liabilities:			
Operating lease liabilities	Operating lease liabilities	**$ 419**	$ 313

Other Information Related to Leases

(in millions)	**December 31, 2022**	December 31, 2021
Supplemental cash flow information:		
Net cash used for operating activities related to operating leases	**$ 145**	$ 145
Net cash used for operating activities related to finance leases	**—**	—
Net cash used for financing activities related to finance leases	**4**	11
Assets obtained in exchange for lease liabilities:		
Operating leases	**$ 221**	$ 40

During the year ended December 31, 2022 the Company recorded $150 million of assets obtained in exchange for lease liabilities due to an assumption that it is reasonably certain that renewal options will be extended on its radio tower site leases operated within the Airwave radio network consistent with the contract extension of the radio communication services through 2026. In addition, assets obtained in exchange for lease liabilities of $34 million were recorded in connection with the Company's acquisition of TETRA Ireland on March 23, 2022.

	December 31, 2022	December 31, 2021
Weighted average remaining lease terms (years):		
Operating leases	**5**	6
Finance leases	**1**	1
Weighted average discount rate:		
Operating leases	**4.07 %**	3.11 %
Finance leases	**3.23 %**	3.99 %

Future Lease Payments

December 31 (in millions)	Operating Leases	Finance Leases	Total
2023	$ 137	$ 1	$ 138
2024	125	—	125
2025	108	—	108
2026	93	—	93
2027	50	—	50
Thereafter	80	—	80
Total lease payments	$ 593	$ 1	$ 594
Less: Interest	56	—	56
Present value of lease liabilities	$ 537	$ 1	$ 538

4. Other Financial Data

Statement of Operations Information

Other Charges (Income)

Other charges (income) included in Operating earnings consist of the following:

Years ended December 31 (in millions)	**2022**	2021	2020
Other charges (income):			
Intangibles amortization (Note 15)	**$ 257**	$ 236	$ 215
Reorganization of businesses (Note 14)	**18**	24	57
Legal Settlements	**23**	3	9
Fixed asset impairments	**12**	—	5
Gain on sale of property, plant, and equipment	**—**	—	(50)
Operating lease asset impairments	**24**	10	—
Acquisition-related transaction fees	**23**	15	9
Gain on Hytera legal settlement	**(15)**	—	—
Other	**(3)**	(2)	1
	$ 339	$ 286	$ 246

During the year ended December 31, 2022, the Company recognized a gain of $15 million related to the recovery, through legal proceedings to seize and liquidate assets, of financial receivables owed to the Company by the bankruptcy estate of two U.S. subsidiaries of Hytera Communications Corporation Limited of Shenzhen, China. Refer also to "Hytera Bankruptcy Proceedings" in Note 12, "Commitments and Contingencies" to our consolidated financial statements included in this "Part I, Item 8.Financial Statements and Supplementary Data" of this Form 10-K for additional information related to these proceedings.

During the year ended December 31, 2022, the Company recognized $24 million of operating lease asset impairments primarily relating to the Company's reduction of its corporate real estate footprint. This loss has been recognized in Other charges in the Company's Consolidated Statements of Operations. During the year ended December 31, 2020, the Company recorded a $50 million gain on the sale of a manufacturing facility in Europe.

Other Income (Expense)

Interest expense, net, and Other both included in Other income (expense) consist of the following:

Years ended December 31 (in millions)	**2022**	2021	2020
Interest expense, net:			
Interest expense	**$ (240)**	$ (215)	$ (233)
Interest income	**14**	7	13
	$ (226)	$ (208)	$ (220)
Other, net:			
Net periodic pension and postretirement benefit (Note 8)	**$ 123**	$ 123	$ 81
Loss from the extinguishment of long-term debt (Note 5)	**(6)**	(18)	(56)
Investment impairments	**(1)**	—	(4)
Foreign currency gain (loss)	**37**	17	(44)
Gain (loss) on derivative instruments	**(61)**	(30)	25
Gains (loss) on equity method investments	**(3)**	5	3
Fair value adjustments to equity investments	**(30)**	(8)	6
Gain on TETRA Ireland equity method investment	**21**	—	—
Other	**(3)**	3	2
	$ 77	$ 92	$ 13

The Company previously held a minority ownership interest in TETRA Ireland, and, upon acquisition of 100% of the equity of TETRA Ireland on March 23, 2022, recorded a $21 million gain to adjust the Company's initial equity method investment to fair value during the year ended December 31, 2022. Refer to "Note 15:" Intangible Assets and Goodwill" to the Company's consolidated financial statements included in this "Part II.Item 8. Financial Statements and Supplementary Data" of this Form 10-K for further information related to this acquisition.

Earnings Per Common Share

Basic and diluted earnings per common share from net earnings attributable to Motorola Solutions, Inc. are computed as follows:

	Amounts attributable to Motorola Solutions, Inc. common stockholders		
	Net Earnings		
Years ended December 31	**2022**	2021	2020
Basic earnings per common share:			
Earnings	**$ 1,363**	$ 1,245	$ 949
Weighted average common shares outstanding	**167.5**	169.2	170.0
Per share amount	**$ 8.14**	$ 7.36	$ 5.58
Diluted earnings per common share:			
Earnings	**$ 1,363**	$ 1,245	$ 949
Weighted average common shares outstanding	**167.5**	169.2	170.0
Add effect of dilutive securities:			
Share-based awards	**3.7**	4.0	4.1
1.75% senior convertible notes	**0.7**	0.4	—
Diluted weighted average common shares outstanding	**171.9**	173.6	174.1
Per share amount	**$ 7.93**	$ 7.17	$ 5.45

In the computation of diluted earnings per common share for the year ended December 31, 2022, the assumed exercise of 0.3 million options, including 0.1 million subject to market-based contingent option agreements, were excluded because their inclusion would have been antidilutive. In the computation of diluted earnings per common share for the year ended December 31, 2021, the assumed exercise of 0.2 million options, including 0.1 million subject to market-based contingent option agreements, were excluded because their inclusion would have been antidilutive. In the computation of diluted earnings per common share for the year ended December 31, 2020, the assumed exercise of 0.4 million options, including 0.1 million subject to market-based contingent option agreements, were excluded because their inclusion would have been antidilutive.

As of December 31, 2022, the Company had $1.0 billion of senior convertible notes outstanding, which mature on September 15, 2024 ("Senior Convertible Notes"). The notes are convertible based on a rate of 4.9140 per $1,000 principal amount as of December 31, 2022 (which is equal to an initial conversion price of $203.50 per share), adjusted for dividends declared through the date of settlement. The notes became fully convertible as of September 5, 2021, providing the holders the option to convert all or any portion of their Senior Convertible Notes. In November 2021, the Company's Board of Directors approved an irrevocable determination requiring the future settlement of the principal amount of the Senior Convertible Notes to be in cash. Because the Company has irrevocably decided to settle the principal amount of the Senior Convertible Notes in cash, the Company did not reflect any shares underlying the Senior Convertible Notes in its diluted weighted average shares outstanding until the average stock price per share for the period exceeded the conversion price, which first occurred for the year ended December 31, 2021. Upon conversion of the Senior Convertible Notes, the Company has the option to settle the conversion spread in cash or shares. The Company included the number of shares that would be issuable upon conversion in the Company’s computation of diluted earnings per share, based on the amount by which the average stock price exceeded the conversion price for the period ended December 31, 2022. The value by which the Senior Convertible Notes exceeded their principal amount if converted as of December 31, 2022 was $304 million. Refer to "Note 5: Debt and Credit Facilities" in this “Part II. Item 8. Financial Statements and Supplementary Data” of this Form 10-K for a further discussion of the Senior Convertible Notes.

Balance Sheet Information

Accounts Receivable, Net

Accounts receivable, net, consists of the following:

December 31	**2022**	2021
Accounts receivable	**$ 1,579**	$ 1,456
Less allowance for credit losses	**(61)**	(70)
	$ 1,518	**$ 1,386**

Inventories, Net

Inventories, net, consist of the following:

December 31		2022		2021
Finished goods	**$**	**354**	$	268
Work-in-process and production materials		**829**		643
		1,183		911
Less inventory reserves		**(128)**		(123)
	$	**1,055**	$	788

Other Current Assets

Other current assets consist of the following:

December 31		2022		2021
Current contract cost assets (Note 2)	**$**	**61**	$	30
Contractor receivables		**47**		7
Tax-related deposits (Note 7)		**33**		41
Other		**242**		181
	$	**383**	$	259

Property, Plant and Equipment, Net

Property, plant and equipment, net, consist of the following:

December 31		2022		2021
Land	**$**	**5**	$	5
Leasehold improvements		**456**		474
Machinery and equipment		**2,303**		2,439
		2,764		2,918
Less accumulated depreciation		**(1,837)**		(1,876)
	$	**927**	$	1,042

During the year ended December 31, 2022, the Company signed a mutual agreement with the Home Office of the United Kingdom (the "Home Office") for the Company to exit the Emergency Services Network ("ESN") communications systems contract early, inclusive of twelve months of transition services through the end of 2023. During the third quarter of 2022, the Company determined that the future service potential of the ESN communications systems contract was limited, based on the Company's intention to terminate the contract in advance of the contracted service term. The Company thus recorded a fixed asset impairment loss of $147 million related to assets constructed and used in the deployment of the contract with the Home Office based on its expectation that, more likely than not, the ESN long-lived asset group would be disposed of significantly before the end of its previously estimated useful life. The impairment loss was recorded in the Software and Services segment within cost of sales in the Consolidated Statements of Operations. The recognized impairment loss represents the amount by which the carrying amount of the asset group exceeded the fair value under a measurement of discounted cash flows.

Depreciation expense for the years ended December 31, 2022, 2021, and 2020 was $183 million, $202 million and $194 million, respectively.

Investments

Investments consist of the following:

December 31		2022		2021
Common stock	**$**	**21**	$	69
Strategic investments, at cost		**45**		35
Company-owned life insurance policies		**69**		81
Equity method investments		**12**		24
	$	**147**	$	209

During the year ended December 31, 2021, the Company paid $50 million for equity securities of NewHold Investment Corp. ("NHIC"), a special purpose acquisition company (SPAC) that completed a business combination with Evolv Technologies, Inc. After the business combination, NHIC was renamed “Evolv Technologies Holdings, Inc.” During the years ended December 31, 2022 and December 31, 2021, the Company recognized a loss of $11 million and $30 million, respectively, in

Other income (expense) within the Consolidated Statements of Operations related to a decrease in the fair value of the investment.

During the year ended December 31, 2022, the Company sold $15 million of equity securities from a single investment, recognizing losses of $11 million in Other income (expense) within the Consolidated Statements of Operations.

Strategic investments include investments in non-public technology-driven startup companies. Strategic investments do not have a readily determinable fair value and are recorded at cost, less any impairment, and adjusted for changes resulting from observable, orderly transactions for identical or similar securities.

During the year ended December 31, 2022, the Company recorded a $1 million investment impairment charge, compared to no investment impairment charges during the year ended December 31, 2021 and $4 million in investment impairments charges during the year ended December 31, 2020, representing other-than-temporary declines in the value of the Company's strategic equity investment portfolio.

Other Assets

Other assets consist of the following:

December 31		**2022**		2021
Defined benefit plan assets (Note 8)	**$**	**164**	$	365
Non-current contract cost assets (Note 2)		**130**		124
Other		**16**		69
	$	**310**	$	558

Accrued Liabilities

Accrued liabilities consist of the following:

December 31		**2022**		2021
Compensation	**$**	**374**	$	360
Tax liabilities (Note 7)		**367**		183
Dividend payable		**148**		134
Trade liabilities		**145**		235
Operating lease liabilities (Note 3)		**118**		124
Customer reserves		**78**		102
Other		**408**		419
	$	**1,638**	**$**	**1,557**

Other Liabilities

Other liabilities consist of the following:

December 31		**2022**		2021
Defined benefit plans (Note 8)	**$**	**1,004**	$	1,390
Non-current contract liabilities (Note 2)		**363**		306
Unrecognized tax benefits (Note 7)		**29**		36
Deferred income taxes (Note 7)		**73**		183
Environmental Reserve		**108**		108
Other		**114**		125
	$	**1,691**	$	2,148

Stockholders' Equity Information

Share Repurchase Program: Through a series of actions, the Board of Directors has authorized the Company to repurchase in the aggregate up to $16.0 billion of its outstanding shares of common stock (the "share repurchase program"). The share repurchase program does not have an expiration date. As of December 31, 2022, the Company had used approximately $14.7 billion of the share repurchase authority, including transaction costs, to repurchase shares, leaving approximately $1.3 billion of authority available for future repurchases.

The Company's share repurchases, including transaction costs, for 2022, 2021, and 2020 can be summarized as follows:

Year	*Shares Repurchased (in millions)*	*Average Price*	*Amount (in millions)*
2022	3.7	$ 225.00	$ 836
2021	2.5	208.41	528
2020	3.9	155.93	612

Payment of Dividends: On November 17, 2022, the Company announced that its Board of Directors approved an increase in the quarterly cash dividend from $0.79 per share of common stock to $0.88 per share of common stock. During the years ended December 31, 2022, 2021, and 2020 the Company paid $530 million, $482 million, and $436 million, respectively, in cash dividends to holders of its common stock. On January 14, 2022, the Company paid an additional $148 million in cash dividends to holders of its common stock.

Accumulated Other Comprehensive Loss

The following table displays the changes in Accumulated other comprehensive loss, including amounts reclassified into income, and the affected line items in the Consolidated Statements of Operations during the years ended December 31, 2022, 2021, and 2020:

	Years ended December 31		
	2022	*2021*	*2020*
Foreign Currency Translation Adjustments:			
Balance at beginning of period	**$ (384)**	$ (360)	$ (410)
Other comprehensive income (loss) before reclassification adjustment	**(156)**	(30)	55
Tax benefit (expense)	**1**	6	(5)
Other comprehensive income (loss), net of tax	**(155)**	(24)	50
Balance at end of period	**$ (539)**	$ (384)	$ (360)
Defined Benefit Plans:			
Balance at beginning of period	**$ (1,995)**	$ (2,086)	$ (2,030)
Other comprehensive income (loss) before reclassification adjustment	**(76)**	37	(130)
Tax benefit (expense)	**18**	(7)	30
Other comprehensive income (loss) before reclassification adjustment, net of tax	**(58)**	30	(100)
Reclassification adjustment - Actuarial net losses into Other income (expense)	**80**	89	76
Reclassification adjustment - Prior service benefits into Other income (expense)	**(2)**	(8)	(18)
Tax expense	**(21)**	(20)	(14)
Reclassification adjustments into Net earnings, net of tax	**57**	61	44
Other comprehensive income (loss), net of tax	**(1)**	91	(56)
Balance at end of period	**$ (1,996)**	$ (1,995)	$ (2,086)
Total Accumulated other comprehensive loss	**$ (2,535)**	$ (2,379)	$ (2,446)

5. Debt and Credit Facilities

Long-Term Debt

December 31	**2022**	2021
4.0% senior notes due 2024	312	585
1.75% senior convertible notes due 2024	1,000	1,000
6.5% debentures due 2025	70	70
7.5% debentures due 2025	252	252
4.6% senior notes due 2028	694	693
6.5% debentures due 2028	24	24
4.6% senior notes due 2029	803	803
2.3% senior notes due 2030	893	893
2.75% senior notes due 2031	845	844
5.60% senior notes due 2032	595	—
6.625% senior notes due 2037	38	38
5.5% senior notes due 2044	397	396
5.22% debentures due 2097	92	92
Other long-term debt	—	5
	6,015	5,695
Adjustments for unamortized gains on interest rate swap terminations	(1)	(2)
Less: current portion	(1)	(5)
Long-term debt	$ 6,013	$ 5,688

On September 5, 2019, the Company entered into an agreement with Silver Lake Partners to issue the Senior Convertible Notes. Interest on these notes is payable semiannually. The notes became fully convertible as of September 5, 2021. The notes are convertible based on a conversion rate of 4.9140 per $1,000 principal amount as of December 31, 2022 (which is equal to an initial conversion price of $203.50 per share), adjusted for dividends declared through the date of settlement. The Company adopted ASU No. 2020-06 on January 1, 2022, using the modified retrospective method of adoption. As a result of the adoption of this ASU, the Senior Convertible Notes are accounted as a single liability measured at its amortized cost, given the embedded conversion feature does not require bifurcation and recognition as a derivative. Upon adoption of this ASU, amounts previously recognized in additional paid-in capital from the original embedded conversion feature of $10 million were reclassified to retained earnings. Refer to "Note 1: Summary of Accounting Policies" in this “Part II. Item 8. Financial Statements and Supplementary Data” of this Form 10-K for a further discussion regarding the effect of the adoption of ASU 2020-06.

In August of 2020, the Company issued $900 million of 2.30% senior notes due 2030. The Company recognized net proceeds of $892 million after debt issuance costs and debt discounts. A portion of these proceeds were then used to redeem $552 million in principal amount outstanding of the 3.75% senior notes due 2022 for a redemption price of $582 million, excluding $7 million of accrued interest. The remaining proceeds were used to repurchase $293 million in principal amount outstanding of its long-term debt under a tender offer, for a purchase price of $315 million, excluding $5 million of accrued interest. After accelerating the amortization of debt issuance costs and debt discounts, the Company recognized a loss of $56 million related to the redemption and the repurchase in Other, net within Other income (expense) in the Consolidated Statements of Operations.

In May of 2021, the Company issued $850 million of 2.75% senior notes due 2031. The Company recognized net proceeds of $844 million after debt issuance costs. A portion of these proceeds were then used to redeem $324 million in principal amount of the 3.5% senior notes due 2023 for a purchase price of $341 million, excluding $3 million of accrued interest. After accelerating the amortization of debt discounts and debt issuance costs, the Company recognized a loss of $18 million related to the redemption in Other, net within Other income (expense) in the Consolidated Statements of Operations.

In May of 2022, the Company issued $600 million of 5.6% senior notes due 2032. The Company recognized net proceeds of $595 million after debt issuance costs and discounts. A portion of these proceeds was then used to repurchase $275 million in principal amount of the Company's 4.0% senior notes due 2024 pursuant to a cash tender offer, for a purchase price of $279 million, excluding $3 million of accrued interest. After accelerating the amortization of debt discounts and debt issuance costs, the Company recognized a loss of $6 million related to the tender offer in Other, net within Other income (expense) in the Consolidated Statements of Operations.

The Company has an unsecured commercial paper program, backed by the 2021 Motorola Solutions Credit Agreement (defined below), under which the Company may issue unsecured commercial paper notes up to a maximum aggregate principal amount of $2.2 billion outstanding at any one time. Proceeds from the issuances of the commercial paper notes are expected to be used for general corporate purposes. The notes are issued at a zero-coupon rate and are issued at a discount which reflects the interest component. At maturity, the notes are paid back in full including the interest component. The notes are not redeemable prior to maturity. As of December 31, 2022 the Company had no outstanding debt under the commercial paper program.

Aggregate requirements for long-term debt maturities during the next three years are as follows: 2023—$1 million; 2024—$1.3 billion; and 2025—$322 million. The Company has no maturities of long-term debt in 2026 or 2027.

Credit Facilities

As of December 31, 2022, the Company had a $2.25 billion syndicated, unsecured revolving credit facility scheduled to mature in March 2026 (the "2021 Motorola Solutions Credit Agreement"). The 2021 Motorola Solutions Credit Agreement includes a letter of credit sub-limit and fronting commitments of $450 million. An annual facility fee is payable on the undrawn amount of the credit line. The interest rate and facility fee are subject to adjustment if the Company's credit rating changes. The Company must comply with certain customary covenants including a maximum leverage ratio, as defined in the 2021 Motorola Solutions Credit Agreement. The Company was in compliance with its financial covenants as of December 31, 2022. Subsequent to year end, on February 8, 2023, the Company entered into an amendment to the 2021 Motorola Solutions Credit Agreement to replace the interest rate benchmark from London Interbank Offered Rate (LIBOR) to the Secured Overnight Financing Rate (SOFR).

6. Risk Management

Foreign Currency Risk

The Company had outstanding foreign exchange contracts with notional amounts totaling $1.1 billion at each of December 31, 2022 and December 31, 2021. The Company does not believe these financial instruments should subject it to undue risk due to foreign exchange movements because gains and losses on these contracts should generally offset gains and losses on the underlying assets, liabilities and transactions.

The following table shows the Company's five largest net notional amounts of the positions to buy or sell foreign currency as of December 31, 2022 and the corresponding positions as of December 31, 2021:

	Notional Amount	
Net Buy (Sell) by Currency	**2022**	2021
British pound	**$ 290**	$ 128
Euro	**185**	164
Australian dollar	**(130)**	(76)
Chinese renminbi	**(61)**	(89)
Brazilian real	**(44)**	(23)

Net Investment Hedges

The Company uses foreign exchange forward contracts to hedge against the effect of the British pound and the Euro exchange rate fluctuations against the U.S. dollar on a portion of its net investment in certain European operations. The Company recognizes changes in the fair value of the net investment hedges as a component of foreign currency translation adjustments within other comprehensive income to offset a portion of the change in translated value of the net investments being hedged, until the investments are sold or liquidated. As of December 31, 2022, the Company had €100 million of net investment hedges in certain Euro functional subsidiaries and £45 million of net investment hedges in certain British pound functional subsidiaries.

Counterparty Risk

The use of derivative financial instruments exposes the Company to counterparty credit risk in the event of non-performance by counterparties. However, the Company’s risk is limited to the fair value of the instruments when the derivative is in an asset position. The Company actively monitors its exposure to credit risk. As of December 31, 2022, all of the counterparties had investment grade credit ratings. As of December 31, 2022, the credit risk with all derivative counterparties was approximately $15 million.

Derivative Financial Instruments

The following tables summarize the fair values and location in the Consolidated Balance Sheet of all derivative financial instruments held by the Company at December 31, 2022 and 2021:

	Fair Values of Derivative Instruments	
December 31, 2022	*Other Current Assets*	*Accrued Liabilities*
Derivatives designated as hedging instruments:		
Foreign exchange contracts	$ —	$ 5
Derivatives not designated as hedging instruments:		
Foreign exchange contracts	15	$ —
Total derivatives	$ 15	$ 5

	Fair Values of Derivative Instruments	
December 31, 2021	*Other Current Assets*	*Accrued Liabilities*
Derivatives designated as hedging instruments:		
Foreign exchange contracts	$ 5	$ —
Derivatives not designated as hedging instruments:		
Foreign exchange contracts	2	5
Total derivatives	$ 7	$ 5

The following table summarizes the effect of derivatives on the Company's consolidated financial statements for the years ended December 31, 2022, 2021 and 2020:

Foreign Exchange Contracts	*Financial Statement Location*	**2022**	2021	2020
Effective portion of derivatives designated	Accumulated other comprehensive income (loss)	**$ 12**	$ 13	$ (7)
Derivatives not designated as hedging instruments	Other income (expense)	**$ (61)**	$ (30)	$ 25

7. Income Taxes

Components of Income Tax Expense

Components of earnings before income taxes are as follows:

Years ended December 31	**2022**	2021	2020
United States	**$ 1,312**	$ 1,030	$ 1,029
Other nations	**203**	522	145
	$ 1,515	$ 1,552	$ 1,174

Components of income tax expense are as follows:

Years ended December 31		**2022**		2021		2020
United States Federal	**$**	**240**	$	134	$	117
Other nations		**159**		98		98
States (U.S.)		**83**		36		31
Current income tax expense		**482**		268		246
United States Federal		**(179)**		(2)		(21)
Other nations		**(118)**		22		8
States (U.S.)		**(37)**		14		(12)
Deferred income tax expense (benefit)		**(334)**		34		(25)
Total income tax expense	**$**	**148**	$	302	$	221

Differences between income tax expense computed at the U.S. federal statutory tax rate of 21% and income tax expense as reflected in the Consolidated Statements of Operations are as follows:

Years ended December 31		**2022**			2021			2020	
Income tax expense at statutory rate	**$**	**318**	**21.0 %**	$	326	21.0 %	$	246	21.0 %
State income taxes, net of federal benefit		**76**	**5.0 %**		55	3.5 %		39	3.3 %
Non-U.S. tax expense on non-U.S. earnings		**1**	**0.1 %**		8	0.5 %		5	0.5 %
U.S. tax expense (benefit) on undistributed non-U.S. earnings		**(43)**	**(2.8)%**		6	0.4 %		(2)	(0.2)%
Intra-group IP transfer		**(77)**	**(5.1)%**		—	— %		—	— %
Stock compensation		**(68)**	**(4.5)%**		(32)	(2.1)%		(48)	(4.1)%
Valuation allowances		**(51)**	**(3.4)%**		(34)	(2.2)%		4	0.3 %
Research credits		**(16)**	**(1.1)%**		(20)	(1.3)%		(28)	(2.4)%
Reserve for uncertain tax positions		**(6)**	**(0.4)%**		(10)	(0.6)%		—	— %
Other tax expense (benefit)		**14**	**0.9 %**		3	0.2 %		5	0.4 %
	$	**148**	**9.8 %**	$	302	19.5 %	$	221	18.8 %

The effective tax rate for 2022 was below the current U.S. federal statutory rate of 21% primarily due to a net deferred tax benefit as a result of an intra-group transfer of certain intellectual property ("IP") rights (described below), the recognition of excess tax benefits on share-based compensation, the foreign derived intangible income deduction, and a partial release of the valuation allowance recorded on the U.S. foreign tax credit carryforward.

In January 2022, the Company completed an intra-group transfer of certain IP rights from non-U.S. wholly-owned subsidiaries of the Company to the United States in order to better align with current and future business operations. The transfer resulted in a step-up in tax basis driven by the fair value of the transferred IP rights, resulting in a one-time net deferred benefit of $77 million during 2022. The determination of the fair value involves judgment on future revenue growth, operating margins and discount rates. The Company expects to realize the net deferred tax asset recorded as a result of the IP transfer and will periodically assess such realizability. The tax-deductible amortization related to the transferred IP rights will be recognized over a 15-year period.

Deferred tax balances that were recorded within Accumulated other comprehensive loss in the Company’s Consolidated Balance Sheet, rather than Income tax expense, are the result of retirement benefit adjustments and currency translation adjustments. The adjustments were charges of $2 million for the year ended December 31, 2022, charges of $21 million for the year ended December 31, 2021 and benefits of $11 million for the year ended December 31, 2020.

The Company evaluates its permanent reinvestment assertions with respect to foreign earnings at each reporting period and generally, except for certain earnings that the Company intends to reinvest indefinitely due to the capital requirements of the foreign subsidiaries or due to local country restrictions, accrues for the U.S. federal and foreign income tax applicable to the earnings. As a result of the 2017 U.S. Tax Cuts and Jobs Act ("the Tax Act"), dividends from foreign subsidiaries are now exempt or the earnings have been previously subject to U.S. tax. As a result, the tax accrual for undistributed foreign earnings is limited primarily to foreign withholding taxes and tax on inherent capital gains that would result from distribution of foreign earnings which are not permanently reinvested, and such earnings may be distributed without an additional charge.

Undistributed foreign earnings that the Company intends to reinvest indefinitely amounted to, in the aggregate, $1.6 billion at December 31, 2022. It is impracticable to determine the exact amount of unrecognized deferred tax liabilities on such earnings; however, due to the above-mentioned changes made under the Tax Act, the Company believes that the additional U.S. or foreign income tax charge with respect to such earnings, if distributed, would be immaterial.

Gross deferred tax assets were $2.2 billion and $2.0 billion for December 31, 2022 and December 31, 2021, respectively. Deferred tax assets, net of valuation allowances, were $2.0 billion and $1.8 billion at December 31, 2022 and December 31, 2021, respectively. Gross deferred tax liabilities were $1.0 billion at each of December 31, 2022 and December 31, 2021, respectively.

Significant components of deferred tax assets (liabilities) are as follows:

December 31	**2022**	2021
Inventory	**$ 38**	$ 29
Accrued liabilities and allowances	**67**	86
Employee benefits	**290**	321
Capitalized items	**95**	(86)
Tax basis differences on investments	**6**	(1)
Depreciation tax basis differences on fixed assets	**1**	23
Undistributed non-U.S. earnings	**(38)**	(36)
Tax attribute carryforwards	**298**	410
Business reorganization	**7**	8
Warranty and customer liabilities	**22**	27
Deferred revenue and costs	**382**	213
Valuation allowances	**(221)**	(275)
Operating lease assets	**(116)**	(95)
Operating lease liabilities	**129**	108
Other	**4**	1
	$ 964	$ 733

At December 31, 2022 and 2021, the Company had valuation allowances of $221 million and $275 million, respectively, against its deferred tax assets, including $46 million and $53 million, respectively, relating to deferred tax assets for non-U.S. subsidiaries. The Company’s U.S. valuation allowance decreased $47 million during 2022 primarily due to a change in the Company's ability to utilize U.S. foreign tax credits. The Company's Non-U.S. valuation allowance decreased $7 million during 2022 primarily due to a change in the realizability of certain Non-US deferred tax assets and the expiration of tax attributes. The Company believes that the remaining deferred tax assets are more-likely-than-not to be realizable based on estimates of future taxable income and the implementation of tax planning strategies.

Tax attribute carryforwards are as follows:

December 31, 2022	*Gross Tax Loss*	*Tax Effected*	*Expiration Period*
United States:			
U.S. tax losses	$ 109	$ 23	2029-2037
Foreign tax credits	—	181	2023
General business credits	—	1	2030-2033
State tax losses	—	16	2023-2041
State tax credits	—	6	2023-2041
Non-U.S. subsidiaries:			
Japan tax losses	9	3	2023-2029
United Kingdom tax losses	152	38	Unlimited
Canada tax losses	17	4	2034-2042
Spain tax credits	—	11	2023-2029
Other subsidiaries tax losses	29	6	Various
Other subsidiaries tax credits	—	9	Various
		$ 298	

The Company had unrecognized tax benefits of $35 million and $43 million at December 31, 2022 and December 31, 2021, respectively, of which approximately $29 million and $36 million, if recognized, would have affected the effective tax rate for 2022 and 2021, respectively.

A roll-forward of unrecognized tax benefits is as follows:

(in millions)	**2022**	2021
Balance at January 1	**$ 43**	$ 64
Additions based on tax positions related to current year	**1**	1
Additions for tax positions of prior years	**2**	2
Reductions for tax positions of prior years	**(1)**	—
Settlements and agreements	**(4)**	(18)
Lapse of statute of limitations	**(6)**	(6)
Balance at December 31	**$ 35**	$ 43

The Company recorded $29 million and $36 million of unrecognized tax benefits in other liabilities at December 31, 2022 and December 31, 2021, respectively.

The Company has several US state and non-U.S. audits pending. A summary of open tax years by major jurisdiction is presented below:

Jurisdiction	*Tax Years*
United States	2018-2022
Australia	2018-2022
Canada	2018-2022
Germany	2018-2022
India	1997-2022
Israel	2019-2022
Poland	2016-2022
Malaysia	2015-2022
United Kingdom	2020-2022

Although the final resolution of the Company's global tax disputes is uncertain, based on current information, in the opinion of the Company's management, the ultimate disposition of these matters will not have a material adverse effect on the Company's consolidated financial position or liquidity. However, an unfavorable resolution of the Company's global tax disputes could have a material adverse effect on the Company's results of operations in the periods, and as of the dates, on which the matters are ultimately resolved.

Based on the potential outcome of the Company's global tax examinations, the expiration of the statute of limitations for specific jurisdictions, or the continued ability to satisfy tax incentive obligations, it is reasonably possible that the unrecognized tax benefits will change within the next twelve months. The associated net tax impact on the effective tax rate, exclusive of valuation allowance changes, is estimated to be up to a $6 million tax benefit.

At December 31, 2022, the Company had $22 million accrued for interest and $12 million accrued for penalties on unrecognized tax benefits. At December 31, 2021, the Company had $22 million and $15 million accrued for interest and penalties, respectively, on unrecognized tax benefits. The Company's policy is to classify the interest and penalty as a component of interest expense and other expense, respectively.

8. Retirement Benefits

Pension and Postretirement Health Care Benefits Plans

U.S. Pension Benefit Plans

The Company's non-contributory U.S. defined benefit plans (the "U.S. Pension Plans") provide benefits to U.S. employees hired prior to January 1, 2005, who became eligible after one year of service. The Company also has an additional non-contributory supplemental retirement benefit plan, the Motorola Supplemental Pension Plan ("MSPP"), which provided supplemental benefits to individuals by replacing benefits that are lost by such individuals under the retirement formula due to application of the limitations imposed by the Internal Revenue Code. In December 2008, the Company amended the U.S. Pension Plans and MSPP (together the "U.S. Pension Benefit Plans") such that, effective March 1, 2009: (i) no participant shall accrue any benefit or additional benefit on or after March 1, 2009, and (ii) no compensation increases earned by a participant on or after March 1, 2009 shall be used to compute any accrued benefit.

Postretirement Health Care Benefits Plan

Certain health care benefits are available to eligible domestic employees hired prior to January 1, 2002 and meeting certain age and service requirements upon termination of employment or retirement eligibility (the "Postretirement Health Care Benefits Plan"). As of January 1, 2005, the Postretirement Health Care Benefits Plan was closed to new participants. After a series of amendments, all eligible retirees under the age of 65 are provided an annual subsidy per household, versus per individual, toward the purchase of their own health care coverage from private insurance companies and for the reimbursement of eligible health care expenses. All eligible retirees over the age of 65 are entitled to one fixed-rate subsidy capped at $560 per participant.

Non-U.S. Pension Benefit Plans

The Company also provides defined benefit plans which cover non-U.S. employees in certain jurisdictions, principally the U.K. and Germany (the "Non-U.S. Pension Benefit Plans"). Other pension plans outside of the U.S. are not material to the Company either individually or in the aggregate.

In June 2015, the Company amended its non-U.S. defined benefit plan within the United Kingdom by closing future benefit accruals to all participants effective December 31, 2015.

Net Periodic Cost (Benefit)

The net periodic cost (benefit) for pension and Postretirement Health Care Benefits plans was as follows:

	U.S. Pension Benefit Plans			*Non-U.S. Pension Benefit Plans*			*Postretirement Health Care Benefits Plan*		
Years ended December 31	**2022**	2021	2020	**2022**	2021	2020	**2022**	2021	2020
Service cost	**$ —**	$ —	$ —	**$ 1**	$ 1	$ 2	**$ —**	$ —	$ —
Interest cost	**128**	115	144	**29**	21	29	**2**	1	2
Expected return on plan assets	**(254)**	(235)	(225)	**(93)**	(99)	(85)	**(12)**	(11)	(10)
Amortization of:									
Unrecognized net loss	**62**	70	58	**14**	16	15	**4**	3	3
Unrecognized prior service benefit	**—**	—	—	**(2)**	(3)	(3)	**—**	(5)	(15)
Net periodic cost (benefit)	**$ (64)**	$ (50)	$ (23)	**$ (51)**	$ (64)	$ (42)	**$ (6)**	$ (12)	$ (20)

The status of the Company's plans is as follows:

	U.S. Pension Benefit Plans		*Non-U.S. Pension Benefit Plans*		*Postretirement Health Care Benefits Plan*	
	2022	2021	**2022**	2021	**2022**	2021
Change in benefit obligation:						
Benefit obligation at January 1	**$ 5,140**	$ 5,226	**$ 1,935**	$ 2,058	**$ 78**	$ 71
Service cost	**—**	—	**1**	1	**—**	—
Interest cost	**128**	115	**29**	21	**2**	1
Plan amendments	**—**	—	**—**	—	**46**	—
Actuarial loss (gain)	**(1,329)**	(71)	**(534)**	(61)	**(12)**	10
Foreign exchange valuation adjustment	**—**	—	**(174)**	(31)	**—**	—
Benefit payments	**(130)**	(130)	**(50)**	(53)	**(11)**	(4)
Benefit obligation at December 31	**$ 3,809**	$ 5,140	**$ 1,207**	$ 1,935	**$ 103**	$ 78
Change in plan assets:						
Fair value at January 1	**$ 4,157**	$ 4,083	**$ 1,870**	$ 1,880	**$ 186**	$ 181
Return on plan assets	**(954)**	201	**(555)**	43	**(41)**	9
Company contributions	**3**	3	**8**	9	**—**	—
Foreign exchange valuation adjustment	**—**	—	**(181)**	(9)	**—**	—
Benefit payments	**(130)**	(130)	**(50)**	(53)	**(11)**	(4)
Fair value at December 31	**$ 3,076**	$ 4,157	**$ 1,092**	$ 1,870	**$ 134**	$ 186
Funded status of the plan	**$ (733)**	$ (983)	**$ (115)**	$ (65)	**$ 31**	$ 108
Unrecognized net loss	**1,689**	1,871	**758**	655	**70**	31
Unrecognized prior service benefit (cost)	**—**	—	**(70)**	(77)	**46**	—
Prepaid pension cost	**$ 956**	$ 888	**$ 573**	$ 513	**$ 147**	$ 139
Components of prepaid (accrued) pension cost:						
Current benefit liability	**$ (3)**	$ (3)	**$ —**	$ —	**$ —**	$ —
Non-current benefit liability	**(730)**	(980)	**(185)**	(297)	**—**	—
Non-current benefit asset	**—**	—	**70**	232	**31**	108
Deferred income taxes	**403**	454	**83**	61	**32**	11
Accumulated other comprehensive loss	**1,286**	1,417	**605**	517	**84**	20
Prepaid pension cost	**$ 956**	$ 888	**$ 573**	$ 513	**$ 147**	$ 139

For the year ended December 31, 2022, the primary driver of the decrease in the U.S. Pension Benefit Plans' benefit obligation was higher actuarial gains due to an increase in the discount rate from 2.98% as of December 31, 2021 to 5.20% as of December 31, 2022. For the year ended December 31, 2021, the primary driver of the decrease in the U.S. Pension Benefit Plans benefit obligation was higher actuarial gains due to an increase in the discount rate from 2.63% as of December 31, 2020 to 2.98% as of December 31, 2021, partially offset by increases in the benefit obligation due to demographic assumption updates.

For the year ended December 31, 2022, the most significant drivers of the decrease in Non-U.S. Pension Benefit Plans' benefit obligation were the higher actuarial gains coupled with favorable foreign exchange effects. The Non-U.S. Pension Benefit Plans incurred actuarial gains primarily due to increases in the discount rates from 1.82% as of December 31, 2021 to 4.60% as of December 31, 2022. For the year ended December 31, 2021, the most significant drivers of the decrease in Non-U.S. Pension Benefit Plans benefit obligation were the higher actuarial gains coupled with favorable foreign exchange effects. The Non-U.S. Pension Benefit Plans incurred actuarial gains primarily due to an increase in the discount rate from 1.24% as of December 31, 2020 to 1.82% as of December 31, 2021.

Actuarial Assumptions

Certain actuarial assumptions such as the discount rate and the long-term rate of return on plan assets have a significant effect on the amounts reported for net periodic cost and the benefit obligation. The assumed discount rates reflect the prevailing market rates of a universe of high-quality, non-callable, corporate bonds currently available that, if the obligation were settled at the measurement date, would provide the necessary future cash flows to pay the benefit obligation when due. The long-term rates of return on plan assets represent an estimate of long-term returns on an investment portfolio consisting of a mixture of equities, fixed income, cash and other investments similar to the actual investment mix. In determining the long-term return on plan assets, the Company considers long-term rates of return on the asset classes (both historical and forecasted) in which the Company expects the plan funds to be invested.

The Company uses a full yield curve approach to estimate interest and service cost components of net periodic cost (benefit) for defined benefit pension and other post-retirement benefit plans. The full yield curve approach requires the application of the specific spot rate along the yield curve used in the determination of the projected benefit obligation to the relevant projected cash flows.

The Company used "Mortality Improvement Scale MP-2021" to calculate both the 2022 U.S. projected benefit obligations and the 2021 U.S. projected benefit obligations.

Weighted average actuarial assumptions used to determine costs for the plans at the beginning of the fiscal year were as follows:

	U.S. Pension Benefit Plans		*Non-U.S. Pension Benefit Plans*		*Postretirement Health Care Benefits Plan*	
	2022	2021	**2022**	*2021*	**2022**	2021
Discount rate	**2.52 %**	2.25 %	**1.68 %**	1.02 %	**2.78 %**	1.57 %
Investment return assumption	**6.76 %**	6.75 %	**4.78 %**	4.54 %	**6.90 %**	6.75 %

Weighted average actuarial assumptions used to determine benefit obligations for the plans were as follows:

	U.S. Pension Benefit Plans		*Non-U.S. Pension Benefit Plans*		*Postretirement Health Care Benefits Plan*	
	2022	2021	**2022**	2021	**2022**	2021
Discount rate	**5.20 %**	2.98 %	**4.60 %**	1.82 %	**5.10 %**	2.78 %
Future compensation increase rate	**n/a**	n/a	**0.67 %**	0.54 %	**n/a**	n/a

The following table presents the accumulated benefit obligation, projected benefit obligation and fair value of plan assets for our plans that have an accumulated benefit obligation and projected benefit obligation in excess of plan assets:

	U.S. Pension Benefit Plans		*Non U.S. Pension Benefit Plans*	
December 31	**2022**	2021	**2022**	2021
Accumulated benefit obligation	**$ 3,809**	$ 5,140	**$ 1,206**	$ 1,933
Projected benefit obligation	**3,809**	5,140	**1,207**	1,935
Fair value of plan assets	**3,076**	4,157	**1,092**	1,870

Investment Policy

The individual plans have adopted an investment policy designed to meet or exceed the expected rate of return on plan assets assumption. To achieve this, the plans retain professional advisors and investment managers that invest plan assets into various classes including, but not limited to: equity and fixed income securities, cash, cash equivalents, hedge funds, infrastructure/utilities, insurance contracts, leveraged loan funds and real estate. The Company uses long-term historical actual return experience with consideration of the expected investment mix of the plans' assets, as well as future estimates of long-term investment returns, to develop its expected rate of return assumption used in calculating the net periodic cost. The individual plans have target mixes for these asset classes, which are readjusted periodically when an asset class weighting deviates from the target mix, with the goal of achieving the required return at a reasonable risk level.

The weighted-average asset allocations by asset categories for all pension plans and the Postretirement Health Care Benefits Plan were as follows:

	All Pension Benefit Plans		*Postretirement Health Care Benefits Plan*	
December 31	**2022**	2021	**2022**	2021
Target Mix:				
Equity securities	**25 %**	26 %	**28 %**	28 %
Fixed income securities	**57 %**	57 %	**52 %**	52 %
Cash and other investments	**18 %**	17 %	**20 %**	20 %
Actual Mix:				
Equity securities	**25 %**	26 %	**28 %**	29 %
Fixed income securities	**56 %**	58 %	**52 %**	53 %
Cash and other investments	**19 %**	16 %	**20 %**	18 %

Within the equity securities asset class, the investment policy provides for investments in a broad range of publicly-traded securities including both domestic and foreign equities. Within the fixed income securities asset class, the investment policy provides for investments in a broad range of publicly-traded debt securities including: U.S. treasury issues, corporate debt securities, mortgage and asset-backed securities, as well as foreign debt securities. In the cash and other investments asset class, investments may include, but are not limited to: cash, cash equivalents, commodities, hedge funds, infrastructure/utilities, insurance contracts, leveraged loan funds and real estate.

Cash Funding

The Company made $3 million of contributions to its U.S. Pension Benefit Plans during each of 2022 and 2021. The Company contributed $8 million and $9 million to its Non U.S. Pension Benefit Plans during 2022 and 2021,respectively. The Company made no contributions to its Postretirement Health Care Benefits Plan in 2022 or 2021.

Expected Future Benefit Payments

The following benefit payments are expected to be paid:

Year	*U.S. Pension Benefit Plans*	*Non-U.S. Pension Benefit Plans*	*Postretirement Health Care Benefits Plan*
2023	$ 165	$ 50	$ 15
2024	187	52	14
2025	207	53	13
2026	226	54	12
2027	244	56	11
2028-2032	1,366	293	35

Other Benefit Plans

Split-Dollar Life Insurance Arrangements

The Company maintains a number of endorsement split-dollar life insurance policies on now-retired officers under a frozen plan. The Company had purchased the life insurance policies to insure the lives of employees and then entered into a separate agreement with the employees that split the policy benefits between the Company and the employee. Motorola Solutions owns the policies, controls all rights of ownership, and may terminate the insurance policies. To effect the split-dollar arrangement, Motorola Solutions endorsed a portion of the death benefits to the employee and upon the death of the employee, the employee's beneficiary typically receives the designated portion of the death benefits directly from the insurance company and the Company receives the remainder of the death benefits. It is currently expected that minimal cash payments will be required to fund these policies.

The net periodic pension cost for these split-dollar life insurance arrangements was $5 million for the years ended December 31, 2022, 2021 and 2020. The Company has recorded a liability representing the actuarial present value of the future death benefits as of the employees' expected retirement date of $54 million and $68 million as of December 31, 2022 and December 31, 2021, respectively.

Deferred Compensation Plan

The Company maintains a deferred compensation plan (“the Plan”) for certain eligible participants. Under the Plan, participants may elect to defer base salary and cash incentive compensation in excess of 401(k) plan limitations. Participants under the Plan may choose to invest their deferred amounts in the same investment alternatives available under the 401(k) plan (as defined below). The Plan also allows for Company matching contributions for the following: (i) the first 4% of compensation deferred under the Plan, subject to a maximum of $50,000 for officers elected by the board of directors of the Company, (ii) lost matching amounts that would have been made under the 401(k) plan if participants had not participated in the Plan, and (iii) discretionary amounts as approved by the Compensation and Leadership Committee of the board of directors.

Defined Contribution Plan

The Company has various defined contribution plans, in which all eligible employees may participate. In the U.S., the Motorola Solutions 401(k) plan (the "401(k) plan") is a contributory plan. Matching contributions are based upon the amount of the employees’ contributions. The Company’s expenses for material defined contribution plans for the years ended December 31, 2022, 2021 and 2020 were $43 million, $36 million and $15 million, respectively.

Due to the economic uncertainties caused by the COVID-19 pandemic, the Company took action in a number of areas to reduce its operating expenses, including by suspending all Company match contributions to the 401(k) plan for the period from May 15, 2020 through December 31, 2020, which were reinstated on January 1, 2021.

Under the 401(k) plan, the Company may make an additional discretionary matching contribution to eligible employees. For the years ended December 31, 2022, 2021, and 2020 the Company made no discretionary contributions.

9. Share-Based Compensation and Other Incentive Plans

The Company grants options and stock appreciation rights to acquire shares of common stock to certain employees and to existing option holders of acquired companies in connection with the merging of option plans following an acquisition. Each option and stock appreciation right granted has an exercise price of no less than 100% of the fair market value of the common stock on the date of the grant. The awards have a contractual life of five to ten years and vest over two to three years. In conjunction with a change in control, stock options and stock appreciation rights assumed or replaced with comparable stock options or stock appreciation rights only become exercisable if the holder is also involuntarily terminated (for a reason other than cause) or resigns for good reason within 24 months of a change in control.

Restricted stock grants consist of shares or the rights to shares of the Company’s common stock which are awarded to certain employees. The grants are restricted in such that they are subject to vesting conditions; however, restricted stock holders have voting rights, and the rights to earn dividends on unvested shares.

Restricted stock unit (“RSU”) grants consist of shares or the rights to shares of the Company’s common stock which are awarded to certain employees and non-employee directors. The grants are restricted such that they are subject to substantial risk of forfeiture and to restrictions on their sale or other transfer by the employee. In conjunction with a change in control, shares of RSUs assumed or replaced with comparable shares of RSUs will only have the restrictions lapse if the holder is also involuntarily terminated (for a reason other than cause) or resigns for good reason within 24 months of a change in control.

Performance-based stock options (“performance options”), market stock units ("MSUs"), and performance stock units ("PSUs") have been granted to certain Company executive officers. Performance options have a three-year performance period and are granted as a target number of units subject to adjustment based on company performance. Each performance option granted has an exercise price of no less than 100% of the fair market value of the common stock on the date of the grant. The awards have a contractual life of ten years. Shares ultimately issued for performance option awards granted are based on the actual total shareholder return (“TSR”) compared to the S&P 500 over the three-year performance period based on a payout factor that corresponds to actual TSR results as established at the date of grant. Vesting occurs on the third anniversary of the grant date. Under the terms of the MSUs, vesting is conditioned upon continuous employment until the vesting date and the payout factor is at least 60% of the share price on the award date. The payout factor is the share price on vesting date divided by share price on award date, with a maximum of 200%. The share price used in the payout factor is calculated using an average of the closing prices on the grant or vesting date, and the 30 calendar days immediately preceding the grant or vesting date. Vesting occurs ratably over three years. PSUs have been granted as a portion of the Long Range Incentive Plan (“LRIP”) awards issued to certain Company executive officers. The PSUs have a three-year performance period and were granted at a target number of units subject to adjustment based on company performance. The number of PSUs earned will be based on the actual TSR compared to the S&P 500 over the three-year performance period.

The employee stock purchase plan allows eligible participants to purchase shares of the Company’s common stock through payroll deductions of up to 20% of eligible compensation on an after-tax basis. Plan participants cannot purchase more than $25,000 of stock in any calendar year. The price an employee pays per share is 85% of the lower of the fair market value of the Company’s stock on the close of the first trading day or last trading day of the purchase period. The plan has two purchase periods, the first from October 1 through March 31 and the second from April 1 through September 30. For the years ended December 31, 2022, 2021 and 2020, employees purchased 0.4 million, 0.6 million and 0.7 million shares, respectively, at purchase prices of $199.16 and $190.37, $133.27 and $160.11, and $112.98 and $107.18, respectively.

Significant Assumptions Used in the Estimate of Fair Value

The Company calculates the value of each employee stock option, estimated on the date of grant, using the Black-Scholes option pricing model. The weighted-average estimated fair value of employee stock options granted during 2022, 2021 and 2020 was $67.18, $41.57 and $39.98, respectively, using the following weighted-average assumptions:

	2022	2021	2020
Expected volatility	**29.2 %**	27.3 %	33.7 %
Risk-free interest rate	**2.5 %**	0.8 %	0.6 %
Dividend yield	**1.9 %**	2.2 %	2.7 %
Expected life (years)	**6.6**	5.9	5.9

The Company calculates the value of each performance option, MSU, and PSU using a Monte Carlo simulation option pricing model, estimated on the date of grant. The fair values of performance options, MSUs, and PSUs granted during 2022 were $84.73, $244.13 and $249.51, respectively. The fair values of performance options, MSUs, and PSUs granted during 2021 were $60.42, $184.71 and $203.57, respectively. The fair value of performance options, MSUs and PSUs granted during 2020 was $77.82, $112.17 and $233.96, respectively. The following assumptions were used for the calculations.

	2022 Performance Options	*2021 Performance Options*	*2020 Performance Options*
Expected volatility of common stock	**29.7 %**	28.5 %	34.7 %
Expected volatility of the S&P 500	**39.2 %**	38.7 %	29.0 %
Risk-free interest rate	**2.0 %**	1.2 %	0.8 %
Dividend yield	**2.0 %**	2.3 %	2.6 %
Expected life (years)	**6.5**	6.5	6.5

	2022 Market Stock Unit	*2021 Market Stock Unit*	*2020 Market Stock Units*
Expected volatility of common stock	**29.7 %**	28.5 %	34.7 %
Risk-free interest rate	**1.9 %**	0.3 %	0.6 %
Dividend yield	**1.6 %**	1.8 %	1.7 %

	2022 Performance Stock Units	*2021 Performance Stock Units*	*2020 Performance Stock Units*
Expected volatility of common stock	**29.7 %**	28.5 %	34.7 %
Expected volatility of the S&P 500	**39.2 %**	38.7 %	29.0 %
Risk-free interest rate	**1.8 %**	0.3 %	0.6 %
Dividend yield	**1.6 %**	1.8 %	1.7 %

The Company uses the implied volatility for traded options on the Company's stock as the expected volatility assumption in the valuation of stock options, performance options, MSUs, and PSUs. The selection of the implied volatility approach was based upon the availability of actively-traded options on the Company's stock and the Company's assessment that implied volatility is more representative of future stock price trends than historical volatility. At the conclusion of each three-year PSU and performance option cycle, the Company uses the historical volatility as the expected volatility to calculate the actual TSR compared to the S&P 500.

The risk-free interest rate assumption is based upon the average daily closing rates during the year for U.S. Treasury notes that have a life which approximates the expected life of the grant. The dividend yield assumption is based on the Company's future expectation of dividend payouts. The expected life represents the average of the contractual term of the options and the weighted average vesting period for all option tranches.

The Company has applied forfeiture rates, estimated based on historical data, of 10% to the stock option fair values calculated by the Black-Scholes option pricing model and 15% to RSUs. These estimated forfeiture rates are applied to grants based on their remaining vesting term and may be revised in subsequent periods if actual forfeitures differ from these estimates.

The following table summarizes information about the total stock options outstanding and exercisable under all stock option plans, at December 31, 2022 (in thousands, except exercise price and years):

	Options Outstanding			*Options Exercisable*		
Exercise price range	*No. of options*	*Wtd. avg. Exercise Price*	*Wtd. avg. contractual life (in yrs.)*	*No. of options*	*Wtd. avg. Exercise Price*	*Wtd. avg. contractual life (in yrs.)*
$51-$70	586	66	2	586	66	2
$71-$90	786	77	4	786	77	4
$91-$110	267	108	5	267	108	5
$111-$130	51	121	6	40	121	6
$131-$150	288	139	6	281	139	6
$151-$170	206	156	7	56	157	7
$171-$190	284	180	8	38	180	8
$191 and over	303	225	9	11	223	9
	2,771			2,065		

As of December 31, 2022, the weighted average contractual life for options outstanding and exercisable was four and three years, respectively.

Current Year Activity

Total share-based compensation activity was as follows (in thousands, except exercise price):

	Stock Options		Restricted Stock Units		Restricted Stock	
	No. of Options Outstanding	*Wtd. Avg. Exercise Price of Shares*	*No. of Non-Vested Awards*	*Wtd. Avg. Grant Date Fair Value*	*No. of Non-Vested Awards*	*Wtd. Avg. Grant Date Fair Value*
Balance as of January 1, 2022	1,587	$ 92	924	$ 199	209	$ 203
Granted	153	227	776	217	48	217
Releases/Exercised	(734)	70	(408)	157	(143)	195
Forfeited/Canceled	(10)	183	(81)	193	—	—
Balance as of December 31, 2022	996	$ 128	1,211	$ 211	114	$ 224
Awards exercisable	684	95	—	—	—	—

	Performance Options		Market Stock Units		Performance Stock Units	
	No. of Options Outstanding	*Wtd. Avg. Exercise Price of Shares*	*No. of Non-Vested Awards*	*Wtd. Avg. Grant Date Fair Value*	*No. of Non-Vested Awards*	*Wtd. Avg. Grant Date Fair Value*
Balance as of January 1, 2022	2,368	$ 91	120	$ 147	128	$ 210
Granted	122	222	43	244	68	248
Releases/Exercised	(830)	72	(80)	140	(48)	217
Adjustment for payout factor	115	133	20	129	21	217
Balance as of December 31, 2022	1,775	$ 112	103	$ 192	169	$ 226
Awards exercisable	1,381	91	—	—	—	—

At December 31, 2022 and 2021, 8.3 million and 4.9 million shares, respectively, were available for future share-based award grants under the current share-based compensation plan, covering all equity awards to employees and non-employee directors.

Total Share-Based Compensation Expense

Compensation expense for the Company’s share-based compensation plans was as follows:

Years ended December 31	**2022**	2021	2020
Share-based compensation expense included in:			
Costs of sales	**$ 28**	$ 16	$ 16
Selling, general and administrative expenses	**98**	79	73
Research and development expenditures	**46**	34	40
Share-based compensation expense included in Operating earnings	**172**	129	129
Tax benefit	**34**	15	30
Share-based compensation expense, net of tax	**$ 138**	$ 114	$ 99
Decrease in basic earnings per share	**$ (0.82)**	$ (0.67)	$ (0.58)
Decrease in diluted earnings per share	**$ (0.80)**	$ (0.66)	$ (0.57)

At December 31, 2022, the Company had unrecognized compensation expense related to all share based awards of $184 million, net of estimated forfeitures, expected to be recognized over the weighted average period of approximately three years and $5 million of unrecognized compensation expense related to the employee stock purchase plan that will be recognized over the remaining purchase period. The aggregate fair value of outstanding share based awards as of December 31, 2022 was $408 million.

Cash received from stock option exercises and the employee stock purchase plan was $156 million, $102 million, and $108 million for the years ended December 31, 2022, 2021, and 2020, respectively. The total intrinsic value of options exercised during the years ended December 31, 2022, 2021, and 2020 was $292 million, $186 million, and $149 million, respectively. The aggregate intrinsic value for options outstanding and exercisable as of December 31, 2022 was $389 million and $342 million, respectively, based on a December 31, 2022 stock price of $257.71 per share.

Motorola Solutions Incentive Plans

The Company's incentive plans provide eligible employees with an annual payment, calculated as a percentage of an employee’s eligible earnings, in the year after the close of the current calendar year if specified business goals and individual performance targets are met. The expense for awards under these incentive plans for the years ended December 31, 2022, 2021 and 2020 was $165 million, $161 million and $78 million, respectively.

Long-Range Incentive Plan

The LRIP rewards elected officers for the Company’s achievement of specified business goals during the period, based on a single performance objective measured over a three-year period. The expense for those LRIP awards with cash settlement terms was $4 million, $8 million and $9 million for the years ended December 31, 2022, 2021 and 2020 , respectively.

10. Fair Value Measurements

Investments and Derivatives

The fair values of the Company’s financial assets and liabilities by level in the fair value hierarchy as of December 31, 2022 and December 31, 2021 were as follows:

December 31, 2022	*Level 1*	*Level 2*	*Total*
Assets:			
Foreign exchange derivative contracts	$ —	$ 15	$ 15
Common stock and equivalents	21	—	21
Liabilities:			
Foreign exchange derivative contracts	$ —	$ 5	$ 5

December 31, 2021	*Level 1*	*Level 2*	*Total*
Assets:			
Foreign exchange derivative contracts	$ —	$ 7	$ 7
Common stock and equivalents	69	—	69
Liabilities:			
Foreign exchange derivative contracts	$ —	$ 5	$ 5

Pension and Postretirement Health Care Benefits Plan Assets

The fair values of the various pension and postretirement health care benefits plans' assets by level in the fair value hierarchy as of December 31, 2022 and 2021 were as follows:

U.S. Pension Benefit Plans

December 31, 2022	*Level 1*	*Level 2*	*Level 3*	*Total*
Equities	$ 48	$ —	$ —	$ 48
Commingled funds	1,159	488	—	1,647
Government fixed income securities	—	159	—	159
Corporate fixed income securities	—	863	—	863
Short-term investment funds	186	—	—	186
Private assets	—	—	111	111
Total investment securities	$ 1,393	$ 1,510	$ 111	$ 3,014
Accrued income receivable				45
Cash				17
Fair value plan assets				$ 3,076

The following table summarizes the changes in fair value of the Level 3 assets:

	2022
Fair value at January 1, 2022	60
Actual return on plan assets	(1)
Purchases	52
Fair value at December 31, 2022	111

December 31, 2021	*Level 1*	*Level 2*	*Level 3*	*Total*
Equities	$ 41	$ —	—	$ 41
Commingled funds	1,601	505	—	2,106
Government fixed income securities	—	412	—	412
Corporate fixed income securities	—	1,145	—	1,145
Short-term investment funds	338	—	—	338
Private Assets	—	—	60	60
Total investment securities	$ 1,980	$ 2,062	$ 60	$ 4,102
Accrued income receivable				49
Cash				6
Fair value plan assets				$ 4,157

Non-U.S. Pension Benefit Plans

December 31, 2022	*Level 1*	*Level 2*	*Total*
Equities	$ 55	$ —	$ 55
Commingled funds	252	41	293
Government fixed income securities	—	491	491
Short-term investment funds	83	—	83
Total investment securities	$ 390	$ 532	$ 922
Cash			3
Accrued income receivable			121
Insurance contracts			46
Fair value plan assets			$ 1,092

December 31, 2021	*Level 1*	*Level 2*	*Total*
Equities	$ 94	$ —	$ 94
Commingled funds	458	75	533
Government fixed income securities	2	1,004	1,006
Short-term investment funds	105	—	105
Total investment securities	$ 659	$ 1,079	$ 1,738
Cash			4
Accrued income receivable			78
Insurance contracts			50
Fair value plan assets			$ 1,870

Postretirement Health Care Benefits Plan

December 31, 2022	*Level 1*	*Level 2*	*Level 3*	*Total*
Equities	$ 2	$ —	$ —	$ 2
Commingled funds	49	22	—	71
Government fixed income securities	—	7	—	7
Corporate fixed income securities	—	39	—	39
Short-term investment funds	8	—	—	8
Private funds	—	—	5	5
Total investment securities	$ 59	$ 68	5	132
Accrued income receivable				2
Fair value plan assets				$ 134

The following table summarizes the changes in fair value of the Level 3 assets:

	2022
Fair value at January 1, 2022	3
Purchases	2
Fair value at December 31, 2022	5

December 31, 2021	*Level 1*	*Level 2*	*Level 3*	*Total*
Equities	$ 2	$ —	$ —	$ 2
Commingled funds	72	23	—	95
Government fixed income securities	—	18	—	18
Corporate fixed income securities	—	51	—	51
Short-term investment funds	15	—	—	15
Private funds	—	—	3	3
Total investment securities	$ 89	$ 92	3	$ 184
Accrued income receivable				2
Fair value plan assets				$ 186

The following is a description of the categories of investments:

Equities — A diversified portfolio of corporate common and preferred stocks.

Commingled funds — A diversified portfolio of assets that includes corporate common and preferred stocks, emerging market and high-yield fixed income securities among others.

Government fixed income securities — Securities issued by municipal, domestic and foreign government agencies, index-linked government bonds as well as interest rate derivatives.

Corporate fixed income securities — A diversified portfolio of primarily investment grade bonds issued by corporations.

Short-term investment funds — Investments in money market accounts and derivatives with a liquidity of less than 90 days.

Private funds — A diversified portfolio of assets that includes private equity funds and private loans.

Level 1 investments include securities which are valued at the closing price reported on the active market in which the individual securities are traded. Level 2 investments consist principally of securities which are valued using independent third party pricing sources. Level 3 investments include securities with valuations derived from valuation techniques, in which one or more significant inputs are unobservable. A variety of inputs are utilized by the independent pricing sources including market based inputs, binding quotes, indicative quotes, and ongoing redemption and subscription activity. Inputs may be weighted differently for any security, and not all inputs are used for each security evaluation.

At December 31, 2022, the Company had $490 million of investments in money market government and U.S. treasury funds (Level 1) classified as Cash and cash equivalents in its Consolidated Balance Sheet, compared to $685 million at December 31, 2021. The money market funds had quoted market prices that are approximately at par.

Using quoted market prices and market interest rates, the Company determined that the fair value of long-term debt at December 31, 2022 was $5.9 billion, of which the Senior Convertible Notes were $1.3 billion (Level 2). The fair value of long-term debt at December 31, 2021 was 6.2 billion (Level 2). Since considerable judgment is required in interpreting market information, the fair value of the long-term debt is not necessarily indicative of the amount which could be realized in a current market exchange.

All other financial instruments are carried at cost, which is not materially different from the instruments' fair values.

11. Long-term Financing and Sales of Receivables

Long-term Financing

Long-term receivables consist of receivables with payment terms greater than twelve months, long-term loans and lease receivables under sales-type leases. Long-term receivables consist of the following:

December 31	2022	2021
Long-term receivables, gross	$ 40	$ 49
Less allowance for losses	(2)	(2)
Long-term receivables	$ 38	$ 47
Less current portion	(13)	(20)
Non-current long-term receivables	$ 25	$ 27

The current portion of long-term receivables is included in Accounts receivable, net and the non-current portion of long-term receivables is included in Other assets in the Company's Consolidated Balance Sheet. The Company recognized interest income on long-term receivables of $1 million for each of the years ended December 31, 2022, 2021 and 2020.

Certain purchasers of the Company's products and services may request that the Company provide long-term financing (defined as financing with a term greater than one year) in connection with the sale of products and services. These requests may include all or a portion of the purchase price of the products and services. The Company's obligation to provide long-term financing may be conditioned on the issuance of a letter of credit in favor of the Company by a reputable bank to support the purchaser's credit or a pre-existing commitment from a reputable bank to purchase the long-term receivables from the Company. The Company had outstanding commitments to provide long-term financing to third-parties totaling $65 million at December 31, 2022 and $56 million at December 31, 2021.

Sales of Receivables

From time to time, the Company sells accounts receivable and long-term receivables to third-parties under one-time arrangements.

The following table summarizes the proceeds received from sales of accounts receivable and long-term receivables for the years ended December 31, 2022, 2021 and 2020.

Years ended December 31	**2022**	2021	2020
Contract-specific discounting facility	**$ 49**	$ 211	$ 228
Accounts receivable sales proceeds	**179**	56	74
Long-term receivables sales proceeds	**204**	248	181
Total proceeds from receivable sales	**$ 432**	$ 515	$ 483

The Company may or may not retain the obligation to service the sold accounts receivable and long-term receivables.

At December 31, 2022, the Company had retained servicing obligations for $891 million of long-term receivables, compared to $940 million of long-term receivables at December 31, 2021. Servicing obligations are limited to collection activities of sold accounts receivables and long-term receivables.

During the year ended December 31, 2022, the Company utilized and fully repaid a cost-efficient receivable discounting facility, implemented in 2020, to neutralize the impact of increased payment terms under a renegotiated and extended long-term contract in Europe. Both the proceeds and repayment of the Company's receivable sales are included in "Operating Activities" within its Consolidated Statements of Cash Flows.

Credit Quality of Long-Term Receivables and Allowance for Credit Losses

An aging analysis of financing receivables at December 31, 2022 and December 31, 2021 is as follows:

December 31, 2022	*Total Long-term Receivable*	*Current Billed Due*	*Past Due Under 90 Days*	*Past Due Over 90 Days*
Municipal leases secured tax exempt	$ 22	$ 1	$ 1	$ 1
Commercial loans and leases secured	18	—	—	2
Long-term receivables, including current portion	$ 40	$ 1	$ 1	$ 3

December 31, 2021	*Total Long-term Receivable*	*Current Billed Due*	*Past Due Under 90 Days*	*Past Due Over 90 Days*
Municipal leases secured tax exempt	$ 28	$ —	$ —	$ —
Commercial loans and leases secured	21	1	—	2
Long-term receivables, including current portion	$ 49	$ 1	$ —	$ 2

The Company uses an internally developed credit risk rating system for establishing customer credit limits. This system is aligned with and comparable to the rating systems utilized by independent rating agencies.

12. Commitments and Contingencies

Purchase Obligations

During the normal course of business, in order to manage manufacturing lead times and help ensure adequate component supply, the Company enters into agreements with contract manufacturers and suppliers that either allow it to procure inventory based upon criteria as defined by the Company or establish the parameters defining the Company’s requirements. In addition, we have entered into software license agreements which are firm commitments and are not cancellable.

As of December 31, 2022, the Company had entered into firm, non-cancelable, and unconditional commitments under such arrangements through 2027. The Company expects to make total payments of $306 million under these arrangements as follows: $131 million in 2023, $127 million in 2024, $27 million in 2025, $18 million in 2026, and $3 million in 2027.

The Company outsources certain corporate functions, such as benefit administration and information technology-related services, under various contracts, the longest of which is expected to expire in 2028. The remaining payments under these contracts are approximately $18 million over the remaining life of the contracts. However, these contracts can be terminated. Termination would result in a penalty substantially less than the remaining annual contract payments. The Company would also be required to find another source for these services, including the possibility of performing them in-house.

Legal Matters

Hytera Litigation

On March 14, 2017, the Company filed a complaint in the U.S. District Court for the Northern District of Illinois (the "Court") against Hytera Communications Corporation Limited of Shenzhen, China; Hytera America, Inc.; and Hytera Communications America (West), Inc. (collectively, "Hytera"), alleging trade secret theft and copyright infringement and seeking, among other things, injunctive relief, compensatory damages, and punitive damages. On February 14, 2020, the Company announced that a jury in the Court decided in the Company's favor in its trade secret theft and copyright infringement case. In connection with this verdict, the jury awarded the Company $345.8 million in compensatory damages and $418.8 million in punitive damages, for a total of $764.6 million. On December 17, 2020, the Court denied the Company's motion for a permanent injunction, finding instead that Hytera must pay the Company a forward-looking reasonable royalty on products that use the Company's stolen trade secrets. As the parties were unable to agree on a reasonable royalty rate, the Court entered an order favorable to the Company on December 15, 2021, and, consistent with the Company's requests, set royalty rates for Hytera's sale of relevant products from July 1, 2019 forward. On July 5, 2022, the Court ordered that Hytera pay into a third-party escrow on July 31, 2022, the royalties owed to the Company based on the sale of relevant products from July 1, 2019 to June 30, 2022. Hytera failed to make the required royalty payment on July 31, 2022. On August 1, 2022, Hytera filed a motion to modify or stay the Court's previous July 5, 2022 royalty order. On August 3, 2022, the Company filed a motion seeking to hold Hytera in civil contempt for violating the royalty order by not making the required royalty payment in July. Hytera made quarterly royalty payments on October 31, 2022 and January 31, 2023 into a third-party escrow. The amounts paid into escrow were de minimis and will not be recognized until all contingencies are resolved and amounts are released from escrow.

In response to the Court's decision to award the Company $764.6 million in compensatory and punitive damages, Hytera motioned for certain equitable relief, which the Court granted on January 8, 2021, reducing the $764.6 million judgment award to $543.7 million. That same day, the Court also granted the Company's motion for prejudgment interest. On August 10, 2021, the Court ruled that Hytera must pay the Company $51.1 million in prejudgment interest and $2.6 million in costs. On March 25, 2021, the Court entered rulings favorable to the Company with respect to several of the Company's post-trial motions, including the Company's motion for attorneys' fees and its motion to require Hytera to turn over certain assets in satisfaction of the Company's judgment award. On October 15, 2021, the Court granted the Company's request for $34.2 million in attorneys' fees against Hytera. On September 29, 2021, the Company filed two additional motions with the Court, requesting the Court to reconsider its order denying the Company's request for an injunction, and requesting that the Court enforce its ruling requiring Hytera to turn over certain assets in satisfaction of the Company's judgment award, or, in the alternative, hold Hytera in contempt. On July 5, 2022, the Court denied both motions.

On September 7, 2021, Hytera filed a notice of appeal of the Court's judgment with the U.S. Court of Appeals for the Seventh Circuit (the "Court of Appeals"). The Court of Appeals dismissed the notice of appeal on February 16, 2022 after determining that such appeal was premature. On August 2, 2022, after the Court denied the motions described above on July 5, 2022, Hytera filed a renewed notice of appeal in the Court of Appeals. The Company filed its cross-appeal on August 5, 2022. On November 15, 2022, Hytera filed its appellate court brief in the Court of Appeals.

Hytera Bankruptcy Proceedings

Separate from the Company's litigation with Hytera, on May 27, 2020, Hytera America, Inc. and Hytera Communications America (West), Inc. each filed for Chapter 11 bankruptcy protection in the U.S. Bankruptcy Court for the Central District of California (the "Bankruptcy Court"). The Company filed motions in the Bankruptcy Court to dismiss the bankruptcy proceedings in July 2020. On January 22, 2021, the Bankruptcy Court entered an agreed order, allowing a partial sale of Hytera's U.S. assets in the bankruptcy proceedings. The proposed sale does not include Hytera inventory accused of including the Company's intellectual property. On February 11, 2022, the Court entered an order to confirm the liquidation plan for the two Hytera entities and the distributions were made on February 25, 2022 to the creditors, including a distribution of $13 million to the Company. On December 22, 2022, an additional distribution of $2 million was made to the Company as well as an assignment of various delinquent accounts receivable of the bankrupt Hytera entities. The gains for the two monetary distributions were recorded to Other charges (income) in the Company's Consolidated Statements of Operations.

13. Information by Segment and Geographic Region

The Company conducts its business globally and manages it through the following two segments:

Products and Systems Integration: The Products and Systems Integration segment offers an extensive portfolio of infrastructure, devices, accessories, video security devices and infrastructure, and the implementation and integration of such systems, devices, and applications. Within LMR Communications, the Company is a global leader in the two-way radio category, including the Company's Project 25 ("P25"), Terrestrial Trunked Radio (TETRA), Digital Mobile Radio (DMR), as well as other professional and commercial radio ("PCR") solutions. The Company provides LTE solutions for public safety, government and commercial users, including infrastructure and devices operating in 700

MHz, 900 MHz and Citizens' Broadband Radio Service (CBRS) frequencies. The Company's Video technology includes network video management infrastructure, fixed security, certain mobile video equipment and access control solutions. The primary customers of the Products and Systems Integration segment are government, public safety and commercial customers who operate private communications networks and video security solutions and typically manage a mobile workforce. In 2022, the segment’s net sales were $5.7 billion, representing 63% of the Company's consolidated net sales.

Software and Services: The Software and Services segment provides a broad range of solution offerings for government, public safety and commercial customers. Software includes public safety and enterprise Command Center, unified communications applications, certain mobile video equipment, and video software solutions, delivered both on-premise and “as-a-service.” Services includes a continuum of service offerings beginning with repair, technical support and maintenance. More advanced technologies include monitoring, software updates and cybersecurity services. Managed services range from partial to full operation of customer-owned or Motorola Solutions-owned networks. In 2022, the segment’s net sales were $3.4 billion, representing 37% of the Company's consolidated net sales.

For the years ended December 31, 2022, 2021 and 2020, no single customer accounted for more than 10% of the Company's net sales.

Segment Information

The following table summarizes Net sales and Operating earnings by segment:

	Net Sales			*Operating Earnings*		
Years ended December 31	**2022**	2021	2020	**2022**	2021	2020
Products and Systems Integration	**$ 5,728**	$ 5,033	$ 4,634	**$ 913**	$ 760	$ 656
Software and Services	**3,384**	3,138	2,780	**748**	907	727
	$ 9,112	$ 8,171	$ 7,414	**$ 1,661**	$ 1,667	$ 1,383
Total other expense				**(146)**	(115)	(209)
Net earnings before income taxes				**$ 1,515**	$ 1,552	$ 1,174

The following table summarizes the Company's capital expenditures and depreciation expense by segment:

	Capital Expenditures			*Depreciation Expense*		
Years ended December 31	**2022**	2021	2020	**2022**	2021	2020
Products and Systems Integration	**$ 77**	$ 90	$ 91	**$ 79**	$ 87	$ 90
Software and Services	**179**	153	126	**104**	115	104
	$ 256	$ 243	$ 217	**$ 183**	$ 202	$ 194

The Company's "chief operating decision maker" does not review or allocate resources based on segment assets.

Geographic Area Information

	Net Sales			*Assets*		
Years ended December 31	**2022**	2021	2020	**2022**	2021	2020
United States	**$ 6,008**	$ 5,236	$ 4,770	**$ 9,227**	$ 9,420	$ 7,009
United Kingdom	**789**	849	740	**2,321**	1,588	2,460
Canada	**366**	324	254	**394**	950	1,016
Other, net of eliminations	**1,949**	1,762	1,650	**872**	231	391
	$ 9,112	$ 8,171	$ 7,414	**$ 12,814**	$ 12,189	$ 10,876

Net sales attributed to geographic area are predominately based on the ultimate destination of the Company's products and services.

14. Reorganization of Businesses

The Company maintains a formal Involuntary Severance Plan (the "Severance Plan"), which permits the Company to offer eligible employees severance benefits based on years of service and employment grade level in the event that employment is involuntarily terminated as a result of a reduction-in-force or restructuring. The Company recognizes termination benefits based on formulas per the Severance Plan at the point in time that future settlement is probable and can be reasonably estimated based on estimates prepared at the time a restructuring plan is approved by management. Exit costs consist of contractual lease termination costs and costs to exit committed contracts. At each reporting date, the Company evaluates its accruals for employee separation and exit costs to ensure the accruals are still appropriate. In certain circumstances, accruals are no longer needed because of efficiencies in carrying out the plans or because employees previously identified for separation resigned from the Company and did not receive severance, or were redeployed due to circumstances not foreseen when the original plans were approved. In these cases, the Company reverses accruals through the Consolidated Statements of Operations where the original charges were recorded when it is determined they are no longer needed.

During 2022, 2021, and 2020 the Company continued to implement various productivity improvement plans aimed at achieving long-term, sustainable profitability by driving efficiencies and reducing operating costs. During 2020, the Company accepted voluntary applications to its Severance Plan from a defined subset of employees within the United States. Voluntary applicants received termination benefits based on the formulas defined in the Severance Plan. However, termination benefits, which are normally different based on employment level grade and capped at nine months of salary, were equalized for all employment level grades and capped at a full year's salary for the voluntary applicants. The remainder of the initiatives impacted both of the Company's segments and affected employees located in all geographic regions.

2022 Charges

During 2022, the Company recorded net reorganization of business charges of $36 million, including $18 million of charges in Costs of sales and $18 million of charges in Other charges in the Company's Consolidated Statements of Operations. Included in the $36 million were charges of $36 million for employee separation costs and $10 million for exit costs, partially offset by $10 million of reversals of accruals no longer needed.

The following table displays the net charges incurred by segment:

Year ended December 31	2022
Products and Systems Integration	$ 21
Software and Services	15
	$ 36

Reorganization of Businesses Accruals

	Accruals at January 1	*Additional Charges*	*Adjustments*	*Amount Used*	***Accruals at December 31***
Reorganization costs	$ 34	$ 36	$ (10)	$ (34)	$ 26
Exit costs	$ —	$ 10	$ —	$ —	$ 10
	$ 34	$ 46	$ (10)	$ (34)	$ 36

Exit Costs

At January 1, 2022, the Company did not have an accrual for exit costs. There were $10 million of exit cost charges in 2022 related to the Company's exit of the ESN contract with the Home Office. The $10 million of exit costs are recorded in Accrued liabilities in the Company's Consolidated Balance Sheet at December 31, 2022, and are expected to be paid within one year.

Employee Separation Costs

At January 1, 2022, the Company had an accrual of $34 million for employee separation costs. The 2022 additional charges of $36 million include severance costs for approximately 460 employees, of which 310 were direct employees and 150 were indirect employees. The adjustments of $10 million reflect reversals of accruals no longer needed. The $34 million used in 2022 reflects cash payments to severed employees. The remaining accrual of $26 million, which is included in Accrued liabilities in the Company's Consolidated Balance Sheet at December 31, 2022, is expected to be paid, primarily within one year to: (i) severed employees who have already begun to receive payments and (ii) approximately 50 employees to be separated in 2023.

2021 Charges

During 2021, the Company recorded net reorganization of business charges of $32 million, including $8 million of charges in Costs of sales and $24 million of charges under Other charges in the Company's Consolidated Statements of Operations. Included in the aggregate $32 million were charges of $42 million for employee separation costs, partially offset by $10 million of reversals of accruals no longer needed.

The following table displays the net charges incurred by segment:

Year ended December 31	2021
Products and Systems Integration	$ 25
Software and Services	7
	$ 32

Reorganization of Businesses Accruals

Accruals at January 1, 2021	*Additional Charges*	*Adjustments*	*Amount Used*	*Accruals at December 31, 2021*
$ 79	$ 42	$ (10)	$ (77)	$ 34

Employee Separation Costs

At January 1, 2021, the Company had an accrual of $79 million for employee separation costs. The additional 2021 charges of $42 million represent severance costs for approximately an additional 600 employees, of which 400 were direct employees and 200 were indirect employees. The adjustments of $10 million reflect reversals of accruals no longer needed. The $77 million used in 2021 reflects cash payments to severed employees. The remaining accrual of $34 million was included in Accrued liabilities in the Company’s Consolidated Balance Sheet at December 31, 2021.

2020 Charges

During 2020, the Company recorded net reorganization of business charges of $86 million, including $29 million of charges in Costs of sales and $57 million of charges in Other charges in the Company’s Consolidated Statements of Operations. Included in the aggregate $86 million are charges of $100 million for employee separation costs and $2 million of charges for exit costs, partially offset by $16 million of reversals for accruals no longer needed.

The following table displays the net charges incurred by segment:

Year ended December 31	2020
Products and Systems integration	$ 69
Software and Services	17
	$ 86

15. Intangible Assets and Goodwill

The Company accounts for acquisitions using purchase accounting with the results of operations for each acquiree included in the Company’s consolidated financial statements for the period subsequent to the date of acquisition.

Recent Acquisitions

On December 14, 2022, the Company acquired Rave Mobile, a leader in mass notification and incident management, for $553 million net of cash acquired. In addition, the Company issued restricted stock at a fair value of $2 million to certain key employees that will be expensed over a service period of two years. This acquisition complements the Company's portfolio with a platform specifically designed to help organizations and public safety agencies communicate and collaborate during emergencies. The Company recognized $431 million of goodwill, $199 million of identifiable intangible assets and $77 million of net liabilities. The goodwill is not deductible for tax purposes. The identifiable intangible assets were classified as $9 million of trade names, $69 million of developed technology and $121 million of customer relationships and will be amortized over a period of nine, seventeen years and seventeen years, respectively. The business is a part of the Software and Services segment. The purchase accounting is not yet complete and as such, the final allocation among income tax accounts, intangible assets, net liabilities and goodwill may be subject to change.

On October 25, 2022, the Company acquired Futurecom, a leading provider of radio coverage extension solutions for public safety agencies, for $30 million, net of cash acquired. Futurecom designs and manufactures radio frequency repeaters. This acquisition further expands the Company's radio network and device portfolios. The Company recognized $13 million of goodwill, $11 million of identifiable intangible assets, and $6 million of net assets. The goodwill is not deductible for tax purposes. The identifiable intangible asset was classified as developed technology and will be amortized over a period of six years. The business is a part of the Products and Systems Integration segment. The purchase accounting is not yet complete and as such, the final allocation among income tax accounts, intangible assets, net assets and goodwill may be subject to change.

On August 8, 2022, the Company acquired Barrett Communications, a global provider of specialized radio communications, for $18 million, net of cash acquired. This acquisition complements the Company's existing radio portfolio, allowing the Company to use high frequency and very high frequency radio communications to support mission-critical operations. The Company recognized $1 million of goodwill, $3 million of identifiable intangible assets, and $14 million of net assets. The identifiable intangible assets were classified as $1 million of trade names and $2 million of developed technology, both of which will be amortized over a period of seven years. The goodwill is not deductible for tax purposes. The business is part of the Products and Systems Integration segment. The purchase accounting is not yet complete and as such, the final allocation among income tax accounts, intangible assets, net assets and goodwill may be subject to change.

On May 12, 2022, the Company acquired Videotec, a global provider of ruggedized video security solutions, for $23 million, net of cash acquired. In addition, the Company issued restricted stock at a fair value of $4 million to certain key employees that will be expensed over a service period of one year. This acquisition extends the Company's breadth of high-performance video products, reinforcing the Company's strategy to be a global leader in video security solutions. The Company recognized $9 million of goodwill, $6 million of identifiable intangible assets, and $8 million of net assets. The goodwill is not deductible for tax purposes. The identifiable intangible asset was classified as developed technology and will be amortized over a period of four years. The business is part of the Products and Systems Integration segment. The purchase accounting is not yet complete and as such, the final allocation among income tax accounts, net assets and goodwill may be subject to change.

On April 19, 2022, the Company acquired Calipsa, a technology leader in cloud-native advanced video analytics, for $39 million, net of cash acquired. In addition, the Company issued restricted stock at a fair value of $4 million to certain key employees that will be expensed over a service period of two years. This acquisition extends the Company's intelligent analytics across video security solutions and supports the accelerating trend of enterprises using cloud technologies to enhance safety and security. The Company recognized $24 million of goodwill, $21 million of identifiable intangible assets, and $6 million of net liabilities. The goodwill is not deductible for tax purposes. The identifiable intangible assets were classified as $20 million of developed technology and $1 million of customer relationships that will be amortized over a period of fifteen and three years, respectively. The business is a part of the Software and Services segment. The purchase accounting is not yet complete and as such, the final allocation among income tax accounts, net liabilities and goodwill may be subject to change.

On March 23, 2022, the Company acquired TETRA Ireland, the provider of Ireland's National Digital Radio Service, for $120 million, net of cash acquired. The Company was an initial shareholder of TETRA Ireland and acquired the remaining interest in the entity from the other shareholders. This acquisition expands the Company's portfolio of delivering mission-critical voice and data communications solutions to first responders and frontline workers. As a result of the acquisition, the Company recognized a $21 million gain recorded within Other income (expense) on the Company's initial minority interest. The Company recognized $47 million of goodwill, $90 million of identifiable intangible assets, and $6 million of net assets. The goodwill is not deductible for tax purposes. The identifiable intangible assets were classified as $83 million of customer relationships and $7 million of trade names that will be amortized over a period of twelve years and fourteen years, respectively. The business is part of the Software and Services segment. The purchase accounting is not yet complete and as such, the final allocation among income tax accounts, net assets and goodwill may be subject to change.

On March 3, 2022, the Company acquired Ava, a global provider of cloud-native video security and analytics, for $388 million, net of cash acquired. In addition, the Company issued restricted stock and restricted stock units at a fair value of $7 million to certain key employees that will be expensed over an average service period of two years. This acquisition expands the Company's portfolio of intelligent video solutions that help to enhance safety and streamline operations. The Company recognized $267 million of goodwill, $165 million of identifiable intangible assets, and $44 million of net liabilities. The goodwill is not deductible for tax purposes. The identifiable intangible assets were classified as $144 million of developed technology and $21 million of customer relationships that will be amortized over a period of fourteen and two years, respectively. The business is a part of both the Products and Systems Integration segment and the Software and Services segment. The purchase accounting is not yet complete and as such, the final allocation among income tax accounts, net liabilities and goodwill may be subject to change.

On December 16, 2021, the Company acquired 911 Datamaster, an NG911 data solutions provider, for $35 million, net of cash acquired. In addition, the Company issued restricted stock at a fair value of $3 million to certain key employees that will be expensed over a service period of two years. This acquisition reinforces Motorola Solutions’ commitment to being a leader in command center solutions and further supports 911 call centers’ unique organizational workflows as they transition to NG911 technologies. The Company recognized $21 million of goodwill, $16 million of identifiable intangible assets and $2 million of net liabilities.The goodwill is deductible for tax purposes. The identifiable intangible assets were classified as $7 million of developed technology and $9 million of customer relationships that will be amortized over periods of nine and fourteen years, respectively. The business is a part of the Software and Services segment. The purchase accounting was completed as of the fourth quarter of 2022.

On October 29, 2021, the Company acquired Envysion, a leader in enterprise video security and business analytics, for $124 million, net of cash acquired. In addition, the Company issued restricted stock at a fair value of $1 million to certain key employees that will be expensed over a service period of one year. This acquisition expands the Company's presence in the industry and reinforces the Company's strategy as a global leader in end-to-end video security solutions within Video. The Company recognized $79 million of goodwill, $37 million of identifiable intangible assets, and $8 million of net assets. The goodwill is not deductible for tax purposes. The identifiable intangible assets were classified as $26 million of customer relationships, $6 million of developed technology, and $5 million of trade names that will be amortized over a period of fifteen, four, and nine years, respectively. The business is a part of both the Products and Systems Integration segment and the Software and Services segment. The purchase accounting was completed as of the fourth quarter of 2022.

On July 15, 2021, the Company acquired Openpath, a cloud-based mobile access control provider for $298 million, net of cash acquired. In addition, the Company issued restricted stock at a fair value of $29 million to certain key employees that will be expensed over an average service period of three years. The transaction included the potential for the Company to make earn-out payments of up to $40 million based on Openpath's achievement of certain financial targets from January 1, 2022 through December 31, 2022. The Company concluded there will be no payout related to the earn-out payments. This acquisition expands the Company's ability to combine video security and access control solutions within Video to help support enterprise customers. The Company recognized $234 million of goodwill, $73 million of identifiable intangible assets, and $9 million of net liabilities. The goodwill is not deductible for tax purposes. The identifiable intangible assets were classified as $57 million of developed technology and $16 million of customer relationships that will be amortized over a period of sixteen and two years, respectively. The business is a part of both the Products and Systems Integration segment and the Software and Services segment. The purchase accounting was completed as of the third quarter of 2022.

On August 28, 2020, the Company acquired Callyo, a cloud-based mobile applications provider for law enforcement in North America for $63 million, inclusive of share-based compensation withheld at a fair value of $3 million that will be expensed over an average service period of two years. The acquisition was settled with $61 million in cash, net of cash acquired. This acquisition adds to Motorola Solutions’ existing Command Center suite critical mobile technology capabilities that enable information to flow seamlessly from the field to the command center. The Company recognized $38 million of goodwill, $31 million of identifiable intangible assets, and $8 million of net liabilities. The goodwill is not deductible for tax purposes. The identifiable intangible assets were classified as $27 million of customer relationships and $4 million of developed technology that will be amortized over a period of fourteen and seven years, respectively. The business is part of the Software and Services segment. The purchase accounting was completed as of the first quarter of 2021.

On July 31, 2020, the Company acquired Pelco, a global provider of video security solutions for a purchase price of $110 million. The acquisition was settled with $107 million of cash, net of cash acquired. The acquisition demonstrates Motorola Solutions’ continued investment in Video, adding a broad range of products that can be used in a variety of commercial and industrial environments and use cases. The Company recognized $38 million of goodwill, $30 million of identifiable intangible assets, and $39 million of net assets. The goodwill is not deductible for tax purposes. The identifiable intangible assets were classified as $23 million of customer relationships, $4 million of developed technology, and $3 million of trade names that will be amortized over a period of fifteen, two, and five years, respectively. The business is a part of both the Products and Systems Integration segment and the Software and Services segment. The purchase accounting was completed as of the third quarter of 2021.

On June 16, 2020, the Company acquired IndigoVision for a purchase price of $37 million. The acquisition was settled with $35 million of cash, net of cash acquired and debt assumed. The acquisition complements the Company's Video technology, providing enhanced geographical reach across a wider customer base. The Company recognized $18 million of goodwill, $22 million of identifiable intangible assets, and $5 million of net liabilities. The goodwill is not deductible for tax purposes. The identifiable intangible asset was classified as $22 million of customer relationships that will be amortized over a period of eleven years. The business is a part of both the Products and Systems Integration and Software and Services segments. The purchase accounting was completed as of the second quarter of 2021.

On April 30, 2020, the Company acquired a cybersecurity services business for a purchase price of $32 million of cash, net of cash acquired. The Company recognized $23 million of goodwill, $10 million of identifiable intangible assets and $1 million of net liabilities. The goodwill is deductible for tax purposes. The identifiable intangible assets were classified as $8 million of customer relationships and $2 million of developed technology that will be amortized over a period of twelve years and three years, respectively. The acquisition expands the Company’s ability to assist customers with cybersecurity needs through vulnerability assessments, cybersecurity consulting, and managed services including security monitoring of network operations. The business is a part of the Software and Services segment. The purchase accounting was completed as of the first quarter of 2021.

On March 3, 2020, the Company acquired a cybersecurity services business for $40 million, inclusive of share-based compensation withheld at a fair value of $6 million that will be expensed over a service period of two years. The acquisition was settled with $33 million of cash, net of cash acquired. The Company recognized $28 million of goodwill, $7 million of intangible assets and $2 million of net liabilities. The goodwill is not deductible for tax purposes. The identifiable intangible asset of $7 million was classified as a customer relationship that will be amortized over a period of thirteen years. The acquisition expands the Company’s ability to assist customers with cybersecurity needs through vulnerability assessments, cybersecurity consulting, managed services and remediation and response capabilities. The business is a part of the Software and Services segment. The purchase accounting was completed as of the first quarter of 2021.

The results of operations for these acquisitions have been included in the Company's Consolidated Statements of Operations subsequent to the acquisition date. The pro forma effects of these acquisitions are not significant individually or in the aggregate.

Intangible Assets

Amortized intangible assets are comprised of the following:

December 31 (in millions)	2022 Gross Carrying Amount	2022 Accumulated Amortization	2021 Gross Carrying Amount	2021 Accumulated Amortization
Intangible assets:				
Developed technology	**$ 1,083**	**$ 358**	$ 828	$ 278
Patents	**2**	**2**	2	2
Customer-related	**1,519**	**935**	1,367	836
Other intangibles	**97**	**64**	82	58
	$ 2,701	**$ 1,359**	$ 2,279	$ 1,174

Amortization expense on intangible assets, which is included within Other charges in the Consolidated Statements of Operations, was $257 million, $236 million, and $215 million for the years ended December 31, 2022, 2021, and 2020, respectively. As of December 31, 2022, future amortization expense is estimated to be $174 million in 2023, $136 million in 2024, $123 million in 2025, $114 million in 2026, and $104 million in 2027.

Amortized intangible assets, excluding goodwill, were comprised of the following by segment:

December 31 (in millions)	2022 Gross Carrying Amount	2022 Accumulated Amortization	2021 Gross Carrying Amount	2021 Accumulated Amortization
Products and Systems Integration	**$ 913**	**$ 261**	$ 766	$ 184
Software and Services	**1,788**	**1,098**	1,513	990
	$ 2,701	**$ 1,359**	$ 2,279	$ 1,174

Goodwill

The following table displays a rollforward of the carrying amount of goodwill, net of impairment losses, by segment from January 1, 2021 to December 31, 2022:

(in millions)	Products and Systems Integration	Software and Services	Total
Balance as of January 1, 2021	$ 1,019	$ 1,200	$ 2,219
Goodwill acquired	218	131	349
Purchase accounting adjustments	(1)	(1)	(2)
Foreign currency translation	—	(1)	(1)
Balance as of December 31, 2021	$ 1,236	$ 1,329	$ 2,565
Goodwill acquired	227	573	800
Purchase accounting adjustments	(2)	(29)	(31)
Foreign currency translation	—	(22)	(22)
Balance as of December 31, 2022	$ 1,461	$ 1,851	$ 3,312

The Company conducts its annual assessment of goodwill for impairment as of the last day of the third quarter of each fiscal year. The goodwill impairment assessment is performed at the reporting unit level which is an operating segment or one level below an operating segment.

In 2022, the Company elected to perform a quantitative assessment for each of its reporting units to determine if the fair value of each reporting unit exceeded the carrying value of the reporting unit. The Company concluded that the fair value of each reporting unit exceeded the carrying value and no goodwill impairment was required.

The Company performed a qualitative assessment to determine whether it was more-likely-than-not that the fair value of each reporting unit was less than its carrying amount for the fiscal years 2021 and 2020. In performing this qualitative assessment the Company assessed relevant events and circumstances including macroeconomic conditions, industry and market conditions, cost factors, overall financial performance, changes in enterprise value, and entity-specific events. For fiscal years 2021 and 2020, the Company concluded it was more-likely-than-not that the fair value of each reporting unit exceeded its carrying value. Therefore, a quantitative goodwill impairment test was not required and there was no impairment of goodwill in 2021 and 2020.

16. Valuation and Qualifying Accounts

The following table presents the valuation and qualifying account activity for the years ended December 31, 2022, 2021, and 2020:

	Balance at Beginning of Period	*Charged to Earnings*	*Used*	*Adjustments**	*Balance at End of Period*
2022					
Allowance for credit losses	$ 70	$ 28	$ (36)	$ (1)	$ 61
2021					
Allowance for credit losses	75	22	(26)	(1)	70
2020					
Allowance for credit losses	63	47	(34)	(1)	75

** Adjustments include translation adjustments*

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

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures.

Under the supervision and with the participation of our senior management, including our chief executive officer and chief financial officer, we conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) or 15d-15(e) under the Exchange Act, as of December 31, 2022 (the "Evaluation Date"), the end of the period covered by this Form 10-K. Based on this evaluation, our chief executive officer and chief financial officer concluded as of the Evaluation Date that our disclosure controls and procedures were effective such that the information relating to Motorola Solutions, including our consolidated subsidiaries, required to be disclosed in our SEC reports: (i) is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms, and (ii) is accumulated and communicated to Motorola Solutions' management, including our chief executive officer and chief financial officer, as appropriate to allow timely decisions regarding required disclosure.

Management's Report on Internal Control Over Financial Reporting.

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting as such term is defined in Rule 13a-15(f) of the Exchange Act. Under the supervision and with the participation of our senior management, including our chief executive officer and chief financial officer, we assessed the effectiveness of our internal control over financial reporting as of December 31, 2022, using the criteria set forth in the *Internal Control-Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on this assessment, management has concluded that our internal control over financial reporting was effective as of December 31, 2022.

The Company's independent registered public accounting firm, PricewaterhouseCoopers LLP, has issued an attestation report on the Company's internal control over financial reporting. The report on the audit of internal control over financial reporting appears in "Part II, Item 8, Financial Statements and Supplementary Data" of this Form 10-K.

Changes in Internal Control Over Financial Reporting.

There have been no changes in our internal control over financial reporting that occurred during our most recent fiscal quarter that have materially affected or are reasonably likely to materially affect our internal control over financial reporting.

Item 9B. Other Information

None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The response to this Item with respect to directors is incorporated herein by reference to the information under the caption "Our Board - Who We Are" of our Proxy Statement; with respect to executive officers, is contained in Part I hereof under the caption "Information About our Executive Officers"; and, with respect to the audit committee, is incorporated herein by reference to the information under the caption "Committees of the Board" of the Proxy Statement.

Motorola Solutions has adopted a code of ethics, the Motorola Solutions Code of Business Conduct (the "Code"), that applies to all employees, including the Company's principal executive officer, principal financial officer and controller (principal accounting officer). The Code is posted in the Corporate Governance section on Motorola Solutions' Internet website, www.motorolasolutions.com/investors, and is available electronically and without charge by contacting Investor Relations at investors@motorolasolutions.com. Any legally required disclosures regarding amendments to, or waivers from, the Code applicable to executive officers will be posted on our Internet website or disclosed in a Current Report on Form 8-K filed with the SEC.

Item 11. Executive Compensation

The response to this Item is incorporated herein by reference to the information under the captions "How We Determine Director Compensation," "How Our Directors Are Compensated," "Compensation Discussion and Analysis," "Compensation and Leadership Committee Report," "Compensation and Leadership Committee Interlocks and Insider Participation," "Named Executive Officer Compensation," and "CEO Pay Ratio" of the Proxy Statement.

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

The response to this Item is incorporated herein by reference to the information under the captions "Equity Compensation Plan Information" and "Security Ownership Information" of the Proxy Statement.

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

The response to this Item is incorporated herein by reference to the information under the captions "Related Person Transaction Policy and Procedures" and "Independence" of the Proxy Statement.

Item 14. Principal Accounting Fees and Services

The response to this Item is incorporated by reference to the information under the captions "Independent Registered Public Accounting Firm Fees" and "Audit Committee Pre-Approval Policies" of the Proxy Statement.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) 1. Financial Statements

See Part II, Item 8 hereof.

2. Financial Statement Schedules

All schedules omitted are inapplicable or the information required is shown in the consolidated financial statements or notes thereto.

3. Exhibits

Exhibit numbers 10.5 through 10.61 listed in this Exhibit Index are management contracts or compensatory plans or arrangements required to be filed as exhibits to this form by Item 15(b) hereof.

2.1	Arrangement Agreement, dated February 1, 2018, among Motorola Solutions, Inc., Motorola Solutions Canada Holdings Inc. and Avigilon Corporation (incorporated by reference to Exhibit 2.1 to Motorola Solutions, Inc.'s Current Report on Form 8-K filed on March 28, 2018).
3.1 (a)	Restated Certificate of Incorporation of Motorola, Inc., as amended through May 5, 2009 (incorporated by reference to Exhibit 3(i)(b) to Motorola, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended July 4, 2009).
3.1 (b)	Certificate of Amendment to the Restated Certificate of Incorporation of Motorola, Inc., effective January 4, 2011, as filed with the Secretary of State of the State of Delaware (incorporated by reference to Exhibit 3.1 to Motorola Solutions, Inc.'s Current Report on Form 8-K filed on January 10, 2011).
3.1 (c)	Certificate of Ownership and Merger merging Motorola Name Change Corporation into Motorola, Inc., effective January 4, 2011, as filed with the Secretary of State of the State of Delaware (incorporated by reference to Exhibit 3.2 to Motorola Solutions, Inc.'s Current Report on Form 8-K filed on January 10, 2011).
3.2	Amended and Restated Bylaws of Motorola Solutions, Inc. effective as of November 17, 2022 (incorporated by reference to Exhibit 3.1 to Motorola Solutions, Inc.'s Current Report on Form 8-K filed on November 18, 2022).
4.1 (a)	Senior Indenture, dated as of May 1, 1995, between The Bank of New York Mellon Trust Company, N.A. (as successor Trustee to JPMorgan Chase Bank (as successor in interest to Bank One Trust Company) and BNY Midwest Trust Company (as successor in interest to Harris Trust and Savings Bank) and Motorola, Inc. (incorporated by reference to Exhibit 4(d) of the Registrant's Registration Statement on Form S-3 filed on September 25, 1995).
4.1 (b)	Instrument of Resignation, Appointment and Acceptance, dated as of January 22, 2001, among Motorola, Inc., Bank One Trust Company, N.A. and BNY Midwest Trust Company (as successor in interest to Harris Trust and Savings Bank) (incorporated by reference to Exhibit 4.2(b) to Motorola, Inc.'s Annual Report on Form 10-K for the fiscal year ended December 31, 2000).
4.1 (c)	Indenture, dated as of August 19, 2014, between Motorola Solutions, Inc. and The Bank of New York Mellon Trust Company, N.A., as trustee (incorporated by reference to Exhibit 4.1 to Motorola Solutions, Inc.'s Current Report on Form 8-K filed on August 19, 2014).
4.1 (d)	Indenture, dated as of September 5, 2019, between Motorola Solutions, Inc. and The Bank of New York Mellon Trust Company, N.A., as trustee, related to the 1.75% Convertible Senior Notes Due 2024 (incorporated by reference to Exhibit 10.2 to Motorola Solutions, Inc.'s Current Report on Form 8-K filed on September 5, 2019).
	Certain instruments defining the rights of holders of long-term debt of Motorola Solutions, Inc. and of all its subsidiaries for which consolidated or unconsolidated financial statements are required to be filed are being omitted pursuant to paragraph (b)(4)(iii)(A) of Item 601 of Regulation S-K. Motorola Solutions, Inc. agrees to furnish a copy of any such instrument to the Commission upon request.
4.2	Description of the Registrant's Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934 (incorporated by reference to Exhibit 4.1(e) to Motorola Solutions, Inc.'s Annual Report on Form 10-K for the fiscal year ended December 31, 2020).
10.1	Amended and Restated Master Separation and Distribution Agreement, effective as of July 31, 2010, among Motorola Mobility Holdings, Inc. (f/k/a Motorola SpinCo Holdings Corporation), Motorola Mobility, Inc. and Motorola, Inc. (incorporated by reference to Exhibit 2.1 to Amendment No. 1 to the Form 10 Registration Statement filed on August 31, 2010 by Motorola Mobility Holdings, Inc. (formerly Motorola SpinCo Holdings Corporation)).
10.2	Amended and Restated Intellectual Property License Agreement, effective as of July 31, 2010, between Motorola Mobility, Inc. and Motorola, Inc. (incorporated by reference to Exhibit 10.2 to Amendment No. 1 to the Form 10 Registration Statement filed on August 31, 2010 by Motorola Mobility Holdings, Inc. (formerly Motorola SpinCo Holdings Corporation)).
10.3	Amended and Restated Exclusive License Agreement, effective as of July 30, 2010, between Motorola Trademark Holdings, LLC and Motorola, Inc. (incorporated by reference to Exhibit 10.3 to Amendment No. 3 to the Form 10 Registration Statement filed on November 12, 2010 by Motorola Mobility Holdings, Inc.).
10.4	Tax Sharing Agreement, effective as of July 31, 2010, among Motorola Mobility Holdings, Inc. (f/k/a Motorola SpinCo Holdings Corporation), Motorola Mobility, Inc. and Motorola, Inc. (incorporated by reference to Exhibit 10.4 to Amendment No. 1 to the Form 10 Registration Statement filed on August 31, 2010 by Motorola Mobility Holdings, Inc. (formerly Motorola SpinCo Holdings Corporation)).

10.5 Motorola Solutions Omnibus Incentive Plan of 2015 (f/k/a the Motorola Omnibus Incentive Plan of 2006), as amended and restated effective May 18, 2015 (incorporated by reference to Exhibit 10.1 to Motorola Solutions, Inc.'s Current Report on Form 8-K filed on May 21, 2015).

10.6 First Amendment to the Motorola Solutions Omnibus Incentive Plan of 2015 (f/k/a the Motorola Omnibus Incentive Plan of 2006), as amended and restated effective May 18, 2015 (incorporated by reference to Exhibit 10.1 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended September 26, 2020).

10.7 Motorola Solutions Amended and Restated Omnibus Incentive Plan of 2015, effective as of May 17, 2022 (incorporated by reference to Exhibit 10.1 to Motorola Solutions, Inc.'s Current Report on Form 8-K filed on May 20, 2022).

10.8 Form of Motorola Solutions, Inc. Performance Option Award Agreement for grants to Section 16 Officers on or after March 10, 2022 (incorporated by reference to Exhibit 10.9 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 2, 2022).

10.9 Form of Motorola Solutions, Inc. Performance Option Award Agreement for grants to Section 16 Officers from February 14, 2019 to March 9, 2022 (incorporated by reference to Exhibit 10.2 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended March 30, 2019).

10.10 Form of Motorola Solutions, Inc. Performance Option Award Agreement for grants to Section 16 Officers from March 9, 2015 to February 13, 2019 (incorporated by reference to Exhibit 10.1 to Motorola Solutions, Inc.'s Current Report on Form 8-K filed on March 11, 2015).

10.11 Form of Motorola Solutions, Inc. Award Document-Terms and Conditions Related to Employee Nonqualified Stock Options for grants to Section 16 Officers on or after March 10, 2022 (incorporated by reference to Exhibit 10.6 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 2, 2022).

10.12 Form of Motorola Solutions, Inc. Award Document-Terms and Conditions Related to Employee Nonqualified Stock Options for grants to Section 16 Officers from May 6, 2013 to March 9, 2022 (incorporated by reference to Exhibit 10.2 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended June 29, 2013).

10.13 Form of Motorola Solutions, Inc. Award Document-Terms and Conditions Related to Employee Nonqualified Stock Options relating to the Motorola Solutions Omnibus Incentive Plan of 2015, as amended, for grants on or after March 10, 2022 (incorporated by reference to Exhibit 10.3 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 2, 2022).

10.14 Form of Motorola Solutions, Inc. Award Document-Terms and Conditions Related to Employee Nonqualified Stock Options relating to the Motorola Solutions Omnibus Incentive Plan of 2015 for grants from February 15, 2018 to March 9, 2022 (incorporated by reference to Exhibit 10.4 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2018).

10.15 Form of Motorola Solutions, Inc. Award Document-Terms and Conditions Related to Employee Nonqualified Stock Options relating to the Motorola Solutions Omnibus Incentive Plan of 2015 for grants from March 9, 2017 to February 14, 2018 (incorporated by reference to Exhibit 10.6 to Motorola Solutions' Quarterly Report on Form 10-Q for the fiscal quarter ended April 1, 2017).

10.16 Form of Motorola Solutions, Inc. Award Document-Terms and Conditions Related to Employee Nonqualified Stock Options relating to the Motorola Solutions Omnibus Incentive Plan of 2006 for grants from February 3, 2014 to March 8, 2017 (incorporated by reference to Exhibit 10.9 to Motorola Solutions, Inc.'s Annual Report on Form 10-K for the fiscal year ended December 31, 2013).

10.17 Form of Motorola Solutions, Inc. Award Document-Terms and Conditions Related to Employee Nonqualified Stock Options relating to the Motorola Solutions Omnibus Incentive Plan of 2006 for grants from January 4, 2011 to February 2, 2014 (incorporated by reference to Exhibit 10.11 to Motorola Solutions, Inc.'s Annual Report on Form 10-K for the fiscal year ended December 31, 2010).

10.18 Form of Motorola Solutions, Inc. Stock Option Consideration Agreement for grants on or after March 10, 2022 (incorporated by reference to Exhibit 10.4 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 2, 2022).

10.19 Form of Motorola Solutions, Inc. Stock Option Consideration Agreement for grants from March 9, 2017 to March 9, 2022 (incorporated by reference to Exhibit 10.7 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 1, 2017).

10.20 Form of Motorola Solutions Stock Option Consideration Agreement for grants from February 3, 2014 to March 8, 2017 (incorporated by reference to Exhibit 10.14 to Motorola Solutions, Inc.'s Annual Report on Form 10-K for the fiscal year ended December 31, 2013).

10.21 Form of Motorola Solutions, Inc. Market Stock Unit Agreement for grants to Section 16 Officers on or after March 10, 2022 (incorporated by reference to Exhibit 10.8 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 2, 2022).

10.22 Form of Motorola Solutions, Inc. Market Stock Unit Agreement for grants to Section 16 Officers from March 9, 2017 to March 9, 2022 (incorporated by reference to Exhibit 10.2 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 1, 2017).

10.23 Form of Motorola Solutions, Inc. Restricted Stock Unit Agreement relating to the Motorola Solutions Omnibus Incentive Plan of 2015, as amended, for grants to Section 16 Officers on or after March 10, 2022 (incorporated by reference to Exhibit 10.10 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 2, 2022).

10.24 Form of Motorola Solutions, Inc. Restricted Stock Unit Agreement relating to the Motorola Solutions Omnibus Incentive Plan of 2015 for grants to Section 16 Officers from March 9, 2017 to March 9, 2022 (incorporated by reference to Exhibit 10.5 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 1, 2017).

10.25 Form of Motorola Solutions, Inc. Restricted Stock Unit Agreement relating to the Motorola Solutions Omnibus Incentive Plan of 2015, as amended, for grants to Appointed Vice Presidents and Elected Officers on or after March 10, 2022 (incorporated by reference to Exhibit 10.1 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 2, 2022).

10.26 Form of Motorola Solutions, Inc. Restricted Stock Unit Agreement relating to the Motorola Solutions Omnibus Incentive Plan of 2015 for grants to Appointed Vice Presidents and Elected Officers from February 15, 2018 to March 9, 2022 (incorporated by reference to Exhibit 10.2 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2018).

10.27 Form of Motorola Solutions, Inc. Restricted Stock Unit Agreement relating to the Motorola Solutions Omnibus Incentive Plan of 2015, as amended, for grants to Employees on or after March 10, 2022 (incorporated by reference to Exhibit 10.2 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 2, 2022).

10.28 Form of Motorola Solutions, Inc. Restricted Stock Unit Agreement relating to the Motorola Solutions Omnibus Incentive Plan of 2015 for grants to Employees from February 15, 2018 to March 9, 2022 (incorporated by reference to Exhibit 10.3 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2018).

10.29 Form of Motorola Solutions, Inc. Performance Stock Unit Award Agreement for grants to non-Section 16 Officers on or after March 10, 2022 (incorporated by reference to Exhibit 10.5 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 2, 2022).

10.30 Form of Motorola Solutions, Inc. Performance Stock Unit Award Agreement for grants to non-Section 16 Officers from February 11, 2021 to March 9, 2022 (incorporated by reference to Exhibit 10.4 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 3, 2021).

10.31 Form of Motorola Solutions, Inc. Performance Stock Unit Award Agreement for grants to Section 16 Officers on or after March 10, 2022 (incorporated by reference to Exhibit 10.7 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 2, 2022).

10.32 Form of Motorola Solutions, Inc. Performance Stock Unit Award Agreement for grants to Section 16 Officers from February 11, 2021 to March 9, 2022 (incorporated by reference to Exhibit 10.3 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 3, 2021).

10.33 Form of Motorola Solutions, Inc. Performance Stock Unit Award Agreement for grants to Section 16 Officers from May 13, 2019 to February 10, 2021 (incorporated by reference to Exhibit 10.1 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended June 29, 2019).

10.34 Form of Motorola Solutions, Inc. Performance Stock Unit Award Agreement for grants to Gregory Q. Brown on or after March 10, 2022 (incorporated by reference to Exhibit 10.11 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 2, 2022).

10.35 Form of Motorola Solutions, Inc. Performance Stock Unit Award Agreement for grants to Gregory Q. Brown from February 11, 2021 to March 9, 2022 (incorporated by reference to Exhibit 10.2 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 3, 2021).

10.36 Form of Motorola Solutions, Inc. Performance Stock Unit Award Agreement for grants to Gregory Q. Brown from May 13, 2019 to February 10, 2021 (incorporated by reference to Exhibit 10.2 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended June 29, 2019).

10.37 Form of Motorola Solutions Award Document-Terms and Conditions Related to Employee Nonqualified Stock Options for Gregory Q. Brown, relating to the Motorola Solutions Omnibus Incentive Plan of 2006 for grants on or after January 4, 2011 (incorporated by reference to Exhibit 10.25 to Motorola Solutions, Inc.'s Annual Report on Form 10-K for the fiscal year ended December 31, 2010).

10.38 Form of Motorola Solutions, Inc. Performance Option Award Agreement for grants to Gregory Q. Brown on or after March 9, 2015 (incorporated by reference to Exhibit 10.3 to Motorola Solutions, Inc.'s Current Report on Form 8-K filed on March 11, 2015).

10.39 Form of Motorola Solutions Stock Option Consideration Agreement for Gregory Q. Brown for grants on or after March 10, 2022 under the Motorola Solutions Omnibus Incentive Plan of 2015, as amended (incorporated by reference to Exhibit 10.13 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 2, 2022).

10.40 Form of Motorola Solutions Stock Option Consideration Agreement for Gregory Q. Brown for grants from January 4, 2011 to March 9, 2022 under the Motorola Solutions Omnibus Incentive Plan of 2006 (incorporated by reference to Exhibit 10.27 to Motorola Solutions, Inc.'s Annual Report on Form 10-K for the fiscal year ended December 31, 2010).

10.41 Form of Motorola Solutions, Inc. Market Stock Unit Agreement for grants to Gregory Q. Brown on or after March 10, 2022 (incorporated by reference to Exhibit 10.12 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 2, 2022).

10.42 Form of Motorola Solutions, Inc. Market Stock Unit Agreement for grants to Gregory Q. Brown from March 9, 2015 to March 9, 2022 (incorporated by reference to Exhibit 10.4 to Motorola Solutions, Inc.'s Current Report on Form 8-K filed on March 11, 2015).

10.43 Form of Motorola Solutions Deferred Stock Units Agreement between Motorola Solutions, Inc. and its non-employee directors, relating to the deferred stock units issued in lieu of cash compensation to directors under the Motorola Solutions Omnibus Incentive Plan of 2006, for acquisitions on or after January 1, 2012 (incorporated by reference to Exhibit 10.37 to Motorola Solutions, Inc.'s Annual Report on Form 10-K for the fiscal year ended December 31, 2011).

10.44 Form of Motorola Solutions Deferred Stock Units Award between Motorola Solutions, Inc. and its non-employee directors under the Motorola Solutions Omnibus Incentive Plan of 2006 or any successor plan for grants on or after January 1, 2012 (incorporated by reference to Exhibit 10.40 to Motorola Solutions, Inc.'s Annual Report on Form 10-K for the fiscal year ended December 31, 2011).

10.45 Form of Motorola Solutions Deferred Stock Units Award between Motorola Solutions, Inc. and its non-employee directors under the Motorola Solutions Omnibus Incentive Plan of 2006 or any successor plan for grants from January 4, 2011 to December 31, 2011 (incorporated by reference to Exhibit 10.39 to Motorola Solutions, Inc.'s Annual Report on Form 10-K for the fiscal year ended December 31, 2010).

10.46 Motorola Solutions Executive Officer Short Term Incentive Plan dated January 17, 2013 (effective January 1, 2013) (incorporated by reference to Exhibit 10.50 to Motorola Solutions' Annual Report on Form 10-K for the fiscal year ended December 31, 2012).

10.47 Motorola Solutions Executive Officer Short Term Incentive Plan Term Sheet (incorporated by reference to Exhibit 10.51 to Motorola Solutions, Inc.'s Annual Report on Form 10-K for the fiscal year ended December 31, 2012).

10.48 Motorola Solutions Long Range Incentive Plan (LRIP), as Amended and Restated February 11, 2021 (incorporated by reference to Exhibit 10.1 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 3, 2021).

10.49 Motorola Solutions Long Range Incentive Plan (LRIP), as Amended and Restated May 13, 2019 (incorporated by reference to Exhibit 10.3 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended June 29, 2019).

10.50 2020-2022 Performance Measures under the Motorola Solutions Long Range Incentive Plan (LRIP), as approved on February 13, 2020 (incorporated by reference to Exhibit 10.1 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended March 28, 2020).

10.51 2021-2023 Performance Measures under the Motorola Solutions Long Range Incentive Plan (LRIP), as approved on February 11, 2021 (incorporated by reference to Exhibit 10.5 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 3, 2021).

10.52 2022-2024 Performance Measures under the Motorola Solutions Long Range Incentive Plan (LRIP), as approved on February 15, 2022 (incorporated by reference to Exhibit 10.14 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended April 2, 2022).

10.53 Motorola Solutions Management Deferred Compensation Plan (As Amended and Restated Effective as of June 1, 2013) (incorporated by reference to Exhibit 10.1 to Motorola Solutions, Inc.'s Current Report on Form 8-K filed on June 5, 2013).

10.54 Motorola Solutions, Inc. 2011 Senior Officer Change in Control Severance Plan, as amended and restated November 13, 2014 (incorporated by reference to Exhibit No. 10.54 to Motorola Solutions, Inc.'s Annual Report on Form 10-K for the fiscal year ended December 31, 2014).

10.55 Motorola Solutions, Inc. 2011 Executive Severance Plan, as amended and restated November 13, 2014 (incorporated by reference to Exhibit No. 10.55 to Motorola Solutions, Inc.'s Annual Report on Form 10-K for the fiscal year ended December 31, 2014).

10.56 Arrangement for directors' fees for non-employee directors (description incorporated by reference from the information under the caption "How our Directors are Compensated" of Motorola Solutions Inc.'s Proxy Statement on Schedule 14A for the 2022 Annual Meeting of Shareholders filed on March 31, 2022 ("Motorola Solutions' Proxy Statement")).

10.57 Description of insurance covering non-employee directors and their spouses (including a description incorporated by reference from the information under the caption "How our Directors are Compensated" of the Motorola Solutions' Proxy Statement, and incorporated by reference to Exhibit 10.1 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended on July 3, 2021).

10.58 Employment Agreement, dated August 27, 2008, by and between Motorola, Inc. and Gregory Q. Brown (incorporated by reference to Exhibit 10.1 to Motorola, Inc.'s Current Report on Form 8-K filed on August 29, 2008).

10.59 Amendment dated December 15, 2008, to the Employment Agreement dated August 27, 2008 by and between Motorola, Inc. and Gregory Q. Brown (incorporated by reference to Exhibit No. 10.50 to Motorola, Inc.'s Annual Report on Form 10-K for the fiscal year ended December 31, 2008).

10.60 Second Amendment, dated May 28, 2010, to the Employment Agreement dated August 27, 2008, as amended, by and between Motorola, Inc. and Gregory Q. Brown (incorporated by reference to Exhibit 10.1 to Motorola, Inc.'s Current Report on Form 8-K filed on May 28, 2010).

10.61 Third Amendment, dated March 10, 2014, to the Employment Agreement dated August 27, 2008, as amended, by and between Motorola Solutions, Inc. and Gregory Q. Brown (incorporated by reference to Exhibit 10.1 to Motorola Solutions, Inc.'s Current Report on Form 8-K filed on March 13, 2014).

10.62 Revolving Credit Agreement, dated as of March 24, 2021, among Motorola Solutions, Inc., JPMorgan Chase Bank, N.A., as administrative agent, and the several lenders and agents party thereto (incorporated by reference to Exhibit 10.1 to Motorola Solutions, Inc.'s Current Report on Form 8-K filed on March 25, 2021).

10.63 Revised and Amended Aircraft Time Sharing Agreement, dated as of October 1, 2015, between Motorola Solutions, Inc. and Gregory Q. Brown (incorporated by reference to Exhibit 10.4 to Motorola Solutions, Inc.'s Quarterly Report on Form 10-Q for the fiscal quarter ended October 3, 2015).

10.64 Investment Agreement, dated as of September 5, 2019, among Motorola Solutions, Inc., Silver Lake Alpine, L.P. and Silver Lake Alpine (Offshore Master) L.P. (incorporated by reference to Exhibit 10.1 to Motorola Solutions, Inc.'s Current Report on Form 8-K filed on September 5, 2019).

*21 Subsidiaries of Motorola Solutions, Inc.

*23.1 Consent of Independent Registered Public Accounting Firm.

*31.1 Certification of Gregory Q. Brown pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.

*31.2 Certification of Jason J. Winkler pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.

**32.1 Certification of Gregory Q. Brown pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

**32.2 Certification of Jason J. Winkler pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

101.INS Inline XBRL Instance Document

101.SCH Inline XBRL Taxonomy Extension Scheme Document

101.CAL Inline XBRL Taxonomy Extension Calculation Linkbase Document

101.DEF Inline XBRL Taxonomy Extension Definition Linkbase Document

101.LAB Inline XBRL Taxonomy Extension Label Linkbase Document

101.PRE Inline XBRL Taxonomy Extension Presentation Linkbase Document

104 Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)

* Filed herewith

** Furnished herewith

(b) Exhibits:

See Item 15(a) 3 above.

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, Motorola Solutions, Inc. has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

MOTOROLA SOLUTIONS, INC.

By: /S/ GREGORY Q. BROWN

Gregory Q. Brown

Chairman and Chief Executive Officer

February 16, 2023

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

Signature	***Title***	***Date***
/S/ GREGORY Q. BROWN Gregory Q. Brown	Chairman and Chief Executive Officer and Director (Principal Executive Officer)	February 16, 2023
/S/ JASON J. WINKLER Jason J. Winkler	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	February 16, 2023
/S/ KATHERINE MAHER Katherine Maher	Corporate Vice President and Chief Accounting Officer (Principal Accounting Officer)	February 16, 2023
/S/ KENNETH D. DENMAN Kenneth D. Denman	Director	February 16, 2023
/S/ EGON P. DURBAN Egon P. Durban	Director	February 16, 2023
/S/ AYANNA M. HOWARD Ayanna M. Howard	Director	February 16, 2023
/S/ CLAYTON M. JONES Clayton M. Jones	Director	February 16, 2023
/S/ JUDY C. LEWENT Judy C. Lewent	Director	February 16, 2023
/S/ GREGORY K. MONDRE Gregory K. Mondre	Director	February 16, 2023
/S/ JOSEPH M. TUCCI Joseph M. Tucci	Director	February 16, 2023