NOKIA CORP

FORM 20-F

(Annual And Transition Report (Foreign Private Issuer))

Filed 02/29/24 for the Period Ending 12/31/23

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As filed with the Securities and Exchange Commission on 29 February 2024

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 20-F

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

For the fiscal year ended 31 December 2023
Commission file number 1-13202

Nokia Corporation

(Exact name of Registrant as specified in its charter)
Republic of Finland
(Jurisdiction of incorporation)
Karakaari 7 FI-02610 Espoo, Finland
(Address of principal executive offices)
Johanna Mandelin, Global Head of Corporate Legal, Telephone: +358 (0) 104 488 000, Facsimile: +358 (0) 104 481 002, Karakaari 7, FI-02610 Espoo, Finland
(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

Securities registered pursuant to Section 12(b) of the Securities Exchange Act of 1934 (the "Exchange Act"):

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
American Depositary Shares	**NOK**	New York Stock Exchange
Shares		New York Stock Exchange[1]

(1) Not for trading, but only in connection with the registration of American Depositary Shares representing these shares, pursuant to the requirements of the Securities and Exchange Commission.

Securities registered pursuant to Section 12(g) of the Exchange Act: **None**
Securities for which there is a reporting obligation pursuant to Section 15(d) of the Exchange Act: **None**
Indicate the number of outstanding shares of each of the registrant's classes of capital or common stock as of the close of the period covered by the annual report. Shares: 5 613 496 565.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.	Yes ☒	No ☐
If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Exchange Act.	Yes ☐	No ☒
Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Exchange Act during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.	Yes ☒	No ☐
Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).	Yes ☒	No ☐

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

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

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

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP ☐

International Financial Reporting Standards as issued by the International Accounting Standards Board ☒

Other ☐

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow. Item 17 ☐ Item 18 ☐

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

Form 20-F Item Number		**Form 20-F Heading**	**Section in Document**
ITEM	1	IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS	N/A
ITEM	2	OFFER STATISTICS AND EXPECTED TIMETABLE	N/A
ITEM	3	KEY INFORMATION	
	3A	[Reserved]	
	3B	Capitalization and Indebtedness	N/A
	3C	Reasons for the Offer and Use of Proceeds	N/A
	3D	Risk Factors	Operating and financial review and prospects—Risk factors
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	4A	History and Development of the Company	Cover page; Business overview; Introduction and use of certain terms; Business overview—Our history; Operating and financial review and prospects—Liquidity and capital resources; General Facts on Nokia—Alternative performance measures; Operating and financial review and prospects—Significant subsequent events; Other information—Investor information
	4B	Business Overview	Business overview—Nokia in 2023; Business overview—Our strategy; Business Overview—Our business groups; Financial statements—Notes to the consolidated financial statements—Note 2.2. Segment information; General facts on Nokia—Government regulation
	4C	Organizational Structure	Business overview—Nokia in 2023; Financial statements—Notes to the consolidated financial statements—Note 2.2. Segment information; Financial statements—Notes to the consolidated financial statements—Note 6.2. Principal Group companies; Financial statements—Notes to the consolidated financial statements—Note 6.3. Significant partly-owned subsidiaries
	4D	Property, Plants and Equipment	Financial statements—Notes to the consolidated financial statements—Note 4.2. Property, plant and equipment; Financial statements—Notes to the consolidated financial statements—Note 4.3. Leases; Business overview—Supply chain, sourcing and manufacturing
	4A	UNRESOLVED STAFF COMMENTS	None
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	5B	Liquidity and Capital Resources	Operating and financial review and prospects—Liquidity and capital resources; Financial statements—Notes to the consolidated financial statements—Note 5.2. Financial assets and liabilities; Financial statements—Notes to the consolidated financial statements—Note 5.3. Derivative and firm commitment assets and liabilities; Financial statements—Notes to the consolidated financial statements—Note 6.1. Commitments, contingencies and legal proceedings; Financial statements—Notes to the consolidated financial statements—Note 5.4. Financial risk management
	5C	Research and Development, Patents and Licenses etc.	Business overview—Our strategy; Business overview—Nokia Technologies; Operating and financial review and prospects—Results of operations; Operating and financial review and prospects—Results of segments
	5D	Trend Information	Business overview—Nokia in 2023; Business overview—Our strategy
	5E	Critical Accounting Estimates	N/A
ITEM	6	DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES	
	6A	Directors and senior management	Corporate governance—Corporate Governance Statement
	6B	Compensation	Corporate governance—Compensation; Financial statements—Notes to the consolidated financial statements—Note 6.4. Related party transactions; Corporate Governance—Remuneration; Financial Statements—Notes to the consolidated financial statements—Note 3.2. Remuneration of key management
	6C	Board Practices	Corporate governance—Corporate governance statement; Corporate governance—Remuneration—Remuneration governance
	6D	Employees	Operating and financial review and prospects—Sustainability and corporate responsibility
	6E	Share Ownership	Business Overview—Nokia in 2023; Corporate governance—Remuneration—Remuneration Report 2023; Corporate governance—Corporate governance statement; Financial statements—Notes to the consolidated financial statements—Note 3.3. Share-based payments

Cross-reference table to Form 20-F

Form 20-F Item Number		Form 20-F Heading	Section in Document
	6F	Disclosure of a registrant's action to recover erroneously awarded compensation	N/A
ITEM	7	MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS	
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	7C	Interests of Experts and Counsel	N/A
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	8B	Significant Changes	Operating and financial review and prospects—Significant subsequent events; Financial statements—Notes to the consolidated financial statements—Notes 6.5. Subsequent events
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	9C	Markets	Operating and financial review and prospects—Shares and shareholders; Financial statements—Notes to the consolidated financial statements—Note 1.1. Corp orate information; Investor information; Other information—Investor information—Stock exchanges
	9D	Selling Shareholders	N/A
	9E	Dilution	N/A
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ITEM	10	ADDITIONAL INFORMATION	
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	10B	Memorandum and Articles of Association	Operating and financial review and prospects—Articles of Association; Other information—Exhibits
	10C	Material Contracts	N/A
	10D	Exchange Controls	General facts on Nokia—Controls and procedures—Exchange controls
	10E	Taxation	General facts on Nokia—Taxation
	10F	Dividends and Paying Agents	N/A
	10G	Statement by Experts	N/A
	10H	Documents on Display	Other information—Investor information—Documents on display
	10I	Subsidiary Information	N/A
ITEM	11	QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK	Business overview—Our strategy; Operating and financial review and prospects—Risk factors—Financial and tax-related uncertainties; Financial statements—N otes to the consolidated financial statements—Note 5.4. Financial risk management; Financial statements—Notes to the consolidated financial statements—Note 4.5. Trad e receivables and other customer-related balances
ITEM	12	DESCRIPTION OF SECURITIES OTHER THA N EQUITY SECURITIES	
	12A	Debt Securities	N/A
	12B	Warrants and Rights	N/A
	12C	Other Securities	N/A
	12D	American Depositary Shares	General facts on Nokia—American Depositary Shares; Introduction and use of certain terms
ITEM	13	DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES	None

Form 20-F Item Number		Form 20-F Heading	Section in Document
ITEM	14	MATERIAL MODIFICATIONS TO THE RIGHT S OF SECURITY HOLDERS AND USE OF PROCEEDS	None
ITEM	15	CONTROLS AND PROCEDURES	Corporate governance—Corporate governance statement—Risk management, internal control and internal audit functions at Nokia; General facts on Nokia—Co ntrols and procedures
ITEM	16	[Reserved]	
	16A	AUDIT COMMITTEE FINANCIAL EXPERT	Corporate governance—Corporate governance statement—Board of Directors—Committees of the Board of Directors
	16B	CODE OF ETHICS	Corporate governance—Corporate governance statement—Regulatory Framework; Operating and financial review and prospects—Sustainability and corporate responsibility; Other information—Exhibits
	16C	PRINCIPAL ACCOUNTANT FEES AND SERVICES	Corporate governance—Corporate governance statement—Auditor fees and services; Corporate governance—Corporate governance statement—Audit Committ ee pre-approval policies and procedures
	16D	EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES	None
	16E	PURCHASES OF EQUITY SECURITIES BY T HE ISSUER AND AFFILIATED PURCHASERS	Operating and financial review and prospects—Shares and shareholders—Purchases of equity securities by the Company and affiliated purchasers Corporate Governance—Compensation
	16F	CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT	N/A
	16G	CORPORATE GOVERNANCE	Corporate governance—Corporate governance statement—Regulatory framework
	16H	MINE SAFETY DISCLOSURE	None
	16I	DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS	N/A
	16J	INSIDER TRADING POLICIES	N/A
	16K	CYBERSECURITY	Corporate governance—Corporate Governance Statement—Risk management, internal control and internal audit functions at Nokia; Operating and financial rev iew and prospects—Risk factors—Risks impacting our competitiveness
ITEM	17	FINANCIAL STATEMENTS	Financial statements
ITEM	18	FINANCIAL STATEMENTS	Financial statements
ITEM	19	EXHIBITS	Other information—Exhibits

Certain statements contained in this report constitute "forward-looking statements." Forward-looking statements provide Nokia's current expectations of future events and trends based on certain assumptions and include any statement that does not directly relate to any current or historical fact. The words “believe,” “expect,” “expectations,” “anticipate,” “foresee,” “see,” “target,” “estimate,” “designed,” “aim,” “plan,” “intend,” “influence,” “assumption,” “focus,” “continue,” “project,” “should,” "is to," "will," "strive," "may," "could," “forecast,” or similar expressions as they relate to us or our management are intended to identify these forward-looking statements, as well as statements regarding:

a)business strategies, projects, market expansion, growth management, and future industry trends and megatrends and our plans to address them;

b)future performance of our businesses and any future distributions and dividends;

c)expectations and targets regarding financial performance, results, operating expenses, cash flows, taxes, currency exchange rates, hedging, cost savings and competitiveness, as well as results of operations including targeted synergies and those related to market share, prices, net sales, income and margins;

d)*expectations,* plans, timelines or benefits related to changes in our organizational and operational structure;

e)market developments in our current and future markets and their seasonality and cyclicality, including the communications service provider market, as well as general economic conditions, future regulatory developments and the expected impact, timing and duration of potential global pandemics and geopolitical conflicts on our businesses, our supply chain, our customers’ businesses and the general market and economic conditions;

f)our position in the market, including product portfolio and geographical reach, and our ability to use the same to develop the relevant business or market and maintain our order pipeline over time;

g)any future collaboration or business collaboration agreements or patent license agreements or arbitration awards, including income from any collaboration or partnership, agreement or award;

h)timing of the development and delivery of our products and services;

i)the outcome of pending and threatened litigation, arbitration, disputes, regulatory proceedings or investigations by authorities;

j)restructurings, investments, capital structure optimization efforts, divestments and our ability to achieve the financial and operational targets set in connection with any such restructurings, investments, and capital structure optimization efforts including our ongoing cost savings program;

k)future capital expenditures, temporary incremental expenditures or other R&D expenditures to develop or rollout new products; and

l)sustainability and corporate responsibility.

These statements are based on management’s best assumptions and beliefs in light of the information currently available to it and are subject to a number of risks and uncertainties, many of which are beyond our control, which could cause actual results to differ materially from such statements. These statements are only predictions based upon our current expectations and views of future events and developments and are subject to risks and uncertainties that are difficult to predict because they relate to events and depend on circumstances that will occur in the future. Risks and uncertainties that could affect these statements include but are not limited to the risk factors specified under the section “Risk factors” of this report and in our other filings or documents furnished with the U.S. Securities and Exchange Commission. Other unknown or unpredictable factors or

Nokia Corporation is a public limited liability company incorporated under the laws of the Republic of Finland and registered to the Finnish Trade Register since 1896. In this Annual Report on Form 20-F, any reference to “we,” “us,” “the Group,” “the company” or “Nokia” means Nokia Corporation and its consolidated subsidiaries and generally Nokia’s continuing operations, except where we separately specify that the term means Nokia Corporation or a particular subsidiary or business segment only or our discontinued operations. References to “our shares,” matters relating to our shares or matters of corporate governance refer to the shares and corporate governance of Nokia Corporation.

Nokia Corporation has published its consolidated financial statements in euro for periods beginning on or after 1 January 1999. In this Annual Report on Form 20-F, references to “EUR,” “euro” or “€” are to the common currency of the European Economic and Monetary Union, references to “dollars,” “US dollars,” “USD” or “$” are to the currency of the United States, and references to “Chinese yuan” or “Chinese yuan renminbi” or “CNY” are to the official currency of the People’s Republic of China.

Additional terms are defined in the "Glossary."

The information contained in, or accessible through, the websites linked throughout this Annual Report on Form 20-F is not incorporated by reference into this document and should not be considered a part of this document.

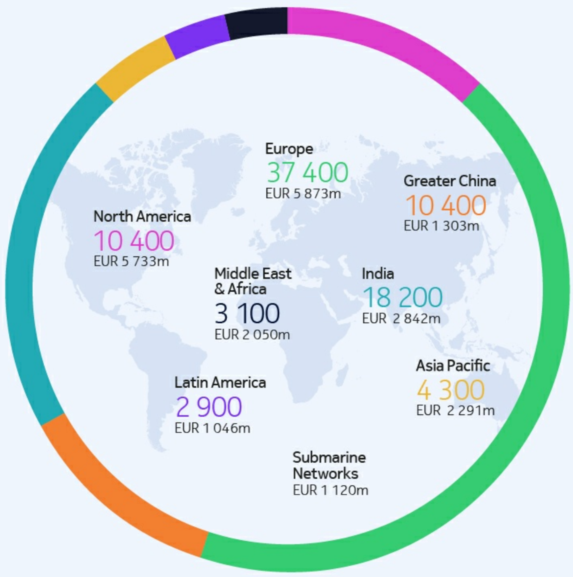
Nokia Corporation furnishes Citibank, N.A., as Depositary, with its consolidated financial statements and a related audit opinion of our independent auditors annually. These financial statements are prepared on the basis of International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board and in conformity with IFRS as adopted by the European Union. In accordance with the rules and regulations of the SEC, we do not provide a reconciliation of our consolidated financial statements to the generally accepted accounting principles in the US, or US GAAP. We also furnish the Depositary with quarterly reports containing unaudited financial information prepared on the basis of IFRS, as well as all notices of shareholders’ meetings and other reports and communications that are made available generally to our shareholders. The Depositary makes these notices, reports and communications available for inspection by record holders of American Depositary Receipts (ADRs), evidencing American Depositary Shares (ADSs), and distributes to all record holders of ADR notices of shareholders’ meetings received by the Depositary.

In addition to the materials delivered to holders of ADRs by the Depositary, holders can access our consolidated financial statements, and other information included in our annual reports and proxy materials, at nokia.com/financials. This Annual Report on Form 20-F is also available at nokia.com/financials as well as on Citibank’s website at https://app.irdirect.net/company/49733/hotline/. Holders may also request a hard copy of this annual report by calling the toll-free number 1-877-NOKIA-ADR (1-877-665-4223), or by directing a written request to Citibank, N.A., Shareholder Services, PO Box 43077, Providence, RI 02940-3081, United States. With each annual distribution of our proxy materials, we offer our record holders of ADRs the option of receiving all of these documents electronically in the future.

Introduction and use of certain terms

Helping the world act together

At Nokia, we create technology that helps the world act together.



Global reach

Our technology solutions enable critical networks for communications service providers (CSPs) and enterprises around the world.

Net sales in 2023

EUR 22.3bn

Countries of operation

120

Key ESG data for 2023

We have gathered a visual summary of key ESG (environmental, social and governance) data points and a view of our recognitions from external ratings organizations. This provides a snapshot with more information in the "Sustainability and corporate responsibility" section of this report.

Nokia carbon footprint in 2023

Million metric tons CO_2e / %

Scope 1, 2 Scope 3

Human Rights Due Diligence cases

Cases handled by the Human Rights Due Diligence process and how they were resolved

Go
Go with conditions
No go

Gender split at the end of 2023

18 900
Female

62 100
Male

3 500
Blank(1)

(1) Detail on employee level not collected or is blank

A-

Nokia again achieved a ranking of A- from CDP[2] for its work on climate change

(2) CDP is a not-for-profit charity that runs the global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts.

ESG Rankings and ratings	Score (range: top/bottom)	Latest result
Bloomberg Gender-Equality Index 2023	83.03% (industry average: 72.36%)	2023 Jan
Clean 200	82nd out of 200	2023 Feb
World Benchmarking Alliance	24th out of 200	2023 Mar
Platinum 2023 ecovadis Sustainability Rating	Top 1% – Platinum	2023 Mar
2023 World's Most Ethical Companies Ethisphere	Recognized as one of the 2023 World's Most Ethical Companies ®	2023 Mar
FTSE4Good	ESG Score 4.7/5.0	2023 Jun
MSCI ESG Ratings AAA	AAA (AAA/CCC)	2023 Aug
ISS ESG Corporate ESG Performance Prime	Prime, B- (A+/D-)	2023 Oct




Our business groups

Nokia has four business groups with each of them aiming to become a technology and market leader in their respective sector.

Network Infrastructure provides the equipment, software and services that enable all of the physical links that power networks. Its product offering includes IP routing and switching products, and the equipment to power fiber networks along with subsea and terrestrial optical networks. Its customers include communications service providers, webscales and hyperscalers, digital industries and governments.

Segment net sales (EUR)	Segment operating margin (%)
-11%	+90 bps

Network Infrastructure's net sales were negatively impacted by market uncertainty during the year, but profitability was robust and there was strong order intake across the business in the last quarter. Network Infrastructure ended the year with improving orders for IP Networks from webscale customers and good momentum in Fixed Networks from government initiatives for broadband deployments. Network Infrastructure also continued to advance its technology leadership with the launch of its PSE-6s solution for optical networking, which went live in customer network trials, setting a new record of 800Gbps per wavelength transmission over 6 600km. The introduction of the 7730 Service Interconnect Router brought the power of our advanced routing silicon to more parts of the network.

Mobile Networks' full-year net sales declined as rapid 5G deployment in India was not enough to offset a reduction in spending in North America. The net sales decline and regional mix led to a modest decline in margins. However, Mobile Networks has increased its 5G market share significantly in recent years and has continued to grow in private wireless and diversify into new segments. The business group also continued to improve its technology competitiveness with new additions to its AirScale radio access network portfolio, powered by the latest ReefShark System-on-Chip technology. Those additions included new high-performance massive MIMO radios as well as new baseband capacity and control cards, ready for 5G-Advanced and delivering unprecedented connectivity, capacity, and energy efficiency. Mobile Networks also launched anyRAN, a revolutionary approach to Cloud RAN giving operators and enterprises high performance, energy efficiency and resiliency.

Cloud and Network Services had a strong year with progress in profitability despite a net sales decline. It introduced the Network as Code platform with a developer portal to accelerate network programmability and monetization, closing the year with nine commercial agreements. Cloud and Network Services also made strides in the management of its portfolio, including the announcement of Red Hat as the primary infrastructure platform for Nokia Core Network applications, the agreed sale of its Device Management and Service Management Platform businesses, and the divestment of its VitalQIP products.

Nokia Technologies experienced a net sales decline as the prior year benefited from a significant one-off and as some of its major patent licensing agreements were still outstanding at the end of 2023. However, Nokia Technologies signed more than 50 deals, including Apple and Samsung, during the year and filed patents on more than 2 300 new inventions to continue building our industry-leading patent portfolio. It also continued to grow in new focus areas, including automotive, consumer electronics, and IoT. In early 2024, Nokia Technologies concluded its smartphone patent license renewal cycle which began in 2021, entering a period of stability.

Strategic progress

Early in 2023 we refreshed our corporate strategy to better position Nokia for longer-term growth opportunities. Sweeping digitalization, advances in artificial intelligence (AI) and the expansion of cloud computing will require significant investments in networks with vastly improved capabilities.

To ensure Nokia capitalizes on those growth opportunities, we announced six strategic pillars in February, and by the end of the year we had made clearly identifiable progress on all of them.

For instance, we meaningfully increased our market share in mobile networks and in optical networks. We also continued to diversify and expand the share of enterprise in our customer mix, with enterprise customers making up more than 10% of our Group net sales in 2023. And we made several moves to actively manage our portfolio this year, including the aforementioned divestments in Cloud and Network Services, and Mobile Networks announcing the acquisition of Fenix Group to strengthen our offer to the defense sector in the United States.

Finally, we made solid progress in developing our environmental, social, and governance (ESG) strengths into a competitive advantage for Nokia. We received another top ranking in Sustainalytics' 2023 ESG Top-Rated Companies list, and MSCI ESG Ratings gave us the highest-level AAA rating. Both of these ratings provide information to investors on financially relevant ESG matters. We also issued our first-ever sustainability-linked bond.

Nokia became the first telecom company to announce the manufacture of fiber broadband optical modules in the United States for the Broadband Equity, Access, and Deployment (BEAD) program, working with partners to bridge the digital divide. And Nokia represented European businesses at a G7 Summit side event in May looking at how to increase cooperation to strengthen digital infrastructure in developing economies.

Renewing our brand

Along with the six strategic pillars, we announced four enablers to support our strategic execution: developing future-fit talent; investing in long-term research in key domains; digitalizing our operations; and renewing our brand to establish a clear position for Nokia as a B2B technology innovation leader.

One of the highlights of the year was the unveiling of our renewed brand at Mobile World Congress in February, which has helped reset how key audiences view our company. Our brand will continue to be an important enabler of our strategy and long-term business goals.

Changes in operating model

To accelerate our strategic execution and navigate market uncertainty, in October we announced plans to give our business groups increased operational autonomy and agility so they could diversify faster, build new ecosystem partnerships, implement new business models, and invest in technology leadership.

As part of this, we streamlined our operating model through embedding sales and other go-to-market teams into the business groups from the start of 2024. Our aim was to increase the agility and speed of decision-making and enable our business groups to better seize growth opportunities with existing and new customers.

Due to ongoing market uncertainty, we also announced a plan to reset our cost base to help protect profitability. We aim to lower our cost base on a gross basis by between EUR 800 million and EUR 1 200 million by the end of 2026, compared to 2023, assuming on-target variable pay in both periods.

Technology leadership drives our business

Since we committed to increasing our R&D funding in 2020, our strengthened technology competitiveness has helped drive market share gains and has contributed to significantly improved customer satisfaction scores.

We updated our Technology Strategy 2030 in October to guide our product and services development as well as our customers' network transformation, with the aim of positioning Nokia as a leader for the 5G era and beyond.

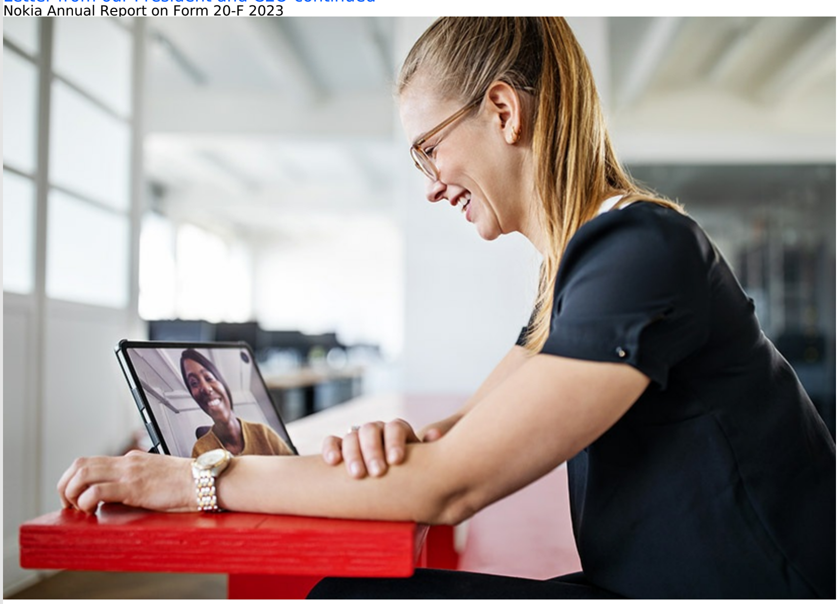
Our innovation is spearheaded by Nokia Bell Labs, which continued to make technological breakthroughs last year including in optical networking and 6G. Two other highlights included UNEXT (Unified Networking Experience), a Nokia Bell Labs research initiative that promises to redefine network software and systems. And our participation in a US Defense Advanced Research Projects Agency (DARPA) initiative to design a future network architecture for the Moon.

To maximize the commercial potential of Nokia Bell Labs' innovations, we embarked on new venture partnerships and a new venture studio. We are now working with America's Frontier Fund, Roadrunner Venture Studios, and Celesta Capital to create and invest in strategic start-ups and to commercialize Nokia Bell Labs' research.

Looking ahead

Despite the challenging market environment, we delivered a resilient financial performance, made progress on our strategy, and continued to create world-leading technology. Nevertheless, it was a challenging year in terms of our share price development, and of course we can't be content with that. Our foremost priority is to create value for our shareholders. We took several steps in pursuit of that goal in 2023 and we will be relentless on improving shareholder value creation going forward. I would like to thank the entire Nokia team for everything they have done this year and their determination to strengthen our position for the future.

Pekka Lundmark
President and CEO



Our customers

We serve three customer segments: communications service providers, enterprises and licensees.

Networks play an increasingly important role in the economy and in society. As a result, we serve a growing number of customers who provide critical services to end-users. We distinguish three customer segments that we serve with our hardware, software and services portfolio: communications services providers and enterprises, therein enterprise verticals and webscalers. In addition, we license our intellectual property to industries that benefit from our fundamental innovations, primarily in the mobile devices, automotive, consumer electronics and IoT industries.

Our analysis of the evolution of these segments is set out below.

1 Communications service providers (CSPs)

The CSPs estimated total addressable market (TAM) declined 6% to EUR 96 billion from 2022 to 2023.

A communications service provider offers telecommunications services such as voice and/or data services through fixed and/or mobile connectivity to consumers, enterprises, governments and other communications service providers. Nokia maintains a consolidated view of the Nokia total addressable market based on multiple external analyst reports, customer and key competitor reported and announced insights as well as Nokia internal insights. We estimate that in 2023, the CSPs estimated total addressable market (excluding Russia and Belarus) for Nokia was EUR 96 billion, having declined by 6% excluding the impact of changes in foreign currency exchange rates from 2022 to 2023 as the macro-environment, high interest rates and inventory build-up during 2022 combined to see operators reduce their spending meaningfully.

We expect it to only grow moderately, at a 1% compound annual growth rate (CAGR) between 2023 and 2028 excluding the impact of changes in foreign currency exchange rates.

We expect that fixed wireless access, fiber, IP routing and optical networks will grow faster than the overall CSP market, driven by the continuous demand for higher speed access technologies at homes and workplaces. The 5G cycle will also yield growth in software, namely in 5G Core and in all software segments supporting 5G operability and monetization.

CSPs have kept their capital expenditure intensity flat, but increased their earnings through automation, digitalization, shifts in channel mix, outsourcing and asset sales. We expect them to remain focused on the monetization of their connectivity strengths, and on cost optimization. They are also considering divesting from passive infrastructure and transitioning towards network sharing models. In areas in which the network is built for coverage, this might reduce demand for network vendor equipment. We have also seen the first examples of CSPs relying on webscalers to lead the transition to cloud-based operational and business models. When combined with open RAN standards that aim at splitting a base transceiver station into subcomponents with open interfaces, this may allow for new entrants into the market and increase competition. Conversely, it should also serve to accelerate innovation and create opportunities for market share gains for those investing in the technology, including for Nokia.

Geopolitics and environmental criteria increasingly influence investment and vendor decisions. Security and sovereignty have become important factors across the vendor landscape. Government-funded broadband initiatives also provide additional funding for investments, for example in rural areas. Sustainability considerations such as green energy use, energy consumption reduction plans and circular economy approaches also shift the criteria for vendor selection.

Webscalers

Webscaler refers to companies that provide cloud-based, scalable solutions and services. Alphabet (Google Cloud Platform), Amazon (Amazon Web Services) and Microsoft (Azure) are the largest cloud players – also referred to as hyperscalers – operating on a global scale. Our TAM for webscalers consists mainly of optical networks and IP routing. Within optical networks, we expect that data center interconnect (DCI) will be a strong growth driver, while the increasing webscaler data traffic requires adoption of higher bit rate technologies also in IP routing.

The largest global webscalers are also assuming an increasingly important role within the telecommunications domain. They target edge computing as the next growth engine for industrial automation workloads and low-latency applications. They also partner with CSPs to co-locate edge stacks on-premises and at metro sites. Additionally, they aim to run telecommunications network workloads on their cloud infrastructure. As such, webscalers are customers and partners, as well as potential competitors in some areas.

3 Licensees

Licensees refers to companies who have agreed licenses to use Nokia's intellectual property. This includes the licensing of Nokia's patent portfolio, the licensing of technologies for integration into consumer devices and licensing of the Nokia brand. The majority of Nokia Technologies' revenues comes from patent licensing where we have agreements with most major smartphone vendors as well as licensing programs for consumer electronics, video services, automotive and the wider IoT domain. In total, we have more than 200 licensees across all our programs, including companies like Apple, Samsung and Lenovo.

Our strategy

Networks are the key enabler for the digitalization of industries and the realization of the broader potential of the metaverse.

In 2021, Nokia set out its strategy to deliver sustainable, profitable growth by becoming a B2B technology innovation leader, accompanied by a new purpose and operating model.

In 2023, Nokia made an evolution in this strategy and how we deliver against it with the introduction of six strategic pillars. These pillars are the key objectives that will define Nokia's success in the future and enable it to achieve its long-term ambitions. Each of Nokia's business groups which will be introduced in the following sections, are focused on implementing these strategic pillars in their respective businesses.

The six pillars are:

1 Grow CSP business faster than market

CSPs will continue to be our biggest customer segment. We will leverage our strong technological position, investment in technology leadership and emerging opportunities to grow our share in key markets, with geopolitical considerations supporting this ambition.

2 Expand the share of enterprise in our business

Enterprise verticals and webscalers are deploying campus networks, wide area private wireless networks, enterprise physical networks and data centers at an accelerated rate to digitalize their operations. Being a technology leader in all these domains, we pursue these opportunities to grow our enterprise business.

3 Actively manage our portfolio

Maintaining our portfolio segments at number one or number two position, through several routes including active portfolio management, is critical for a profitable and sustainable business. There may be cases where a leadership position is not possible and for these cases, we will consider alternatives.

4 Secure business longevity in Nokia Technologies

We are investing to ensure the sustained competitiveness of our patent portfolio. We will continue to pursue opportunities from sectors outside mobile devices, such as automotive, consumer electronics, IoT and video services.

5 Build new business models

To broaden our customer base and change our margin profile, we see potential in new platform business models within the broader ecosystem. We engage with service providers, webscalers, industrial giants and emerging players like app developers and start-ups, to drive the creation of new products, services, and solutions, and to explore new business models including Cloud RAN, Network as Code and as-a-Service.

6 Develop ESG into a competitive advantage

ESG is increasingly important for customers, investors, regulators, partners and Nokia employees. There is space in our industry to become the 'trusted provider' and Nokia aims to claim this position. Our ESG strategy lays out how we will do this and our specific areas of focus.

The six pillars are underpinned by four enablers:

Develop future-fit-talent

We have launched and are executing a new people strategy focused on growth, skills and development. We build the right future skills for our employees in the technical domains identified in our technology vision and strategy, and the commercial skills to support our expansion

Invest in long-term research

Sustained technology leadership is a key driver of our success: it requires us to anticipate, shape and invest in the next technology waves and breakthroughs. We continue to invest in long-term research to ensure a leadership position in line with our Technology Vision 2030. We are also deeply engaged in leading and influencing standards and developing standar

Digitalize our own operations

We are increasing the digitalization of our own operations to lead by example with a set of ambitious, company-wide strategic initiatives to increase the company's performance and competitiveness, focused on efficiency, productivity and agility in internal operations.

Refresh our brand

To ensure Nokia is recognized as a B2B technology innovation leader, we refreshed our brand in 2023. Our new visual identity is emblematic of an energized, dynamic and modern Nokia.

Accelerating strategy execution – providing business groups with greater autonomy

In 2021, Nokia significantly streamlined its operating model, moving from a matrix organization and creating four P&L-responsible business groups structured around unique customer offerings. Since then, its business groups have increased investments in R&D, strengthened their technology leadership, and rebalanced their portfolio while growing faster than the market and expanding into new growth areas.

- Network Infrastructure has extended its technology leadership position and is growing faster than the market
- Mobile Networks substantially improved the competitiveness of its products, taking a leadership position in 5G and gaining market share
- Cloud and Network Services has grown faster than the market in its five growth segments, including Enterprise private wireless, while rebalancing its portfolio
- Nokia Technologies has expanded into areas such as automotive, multimedia and consumer electronics, and has signed new patent license agreements with Apple and Samsung

In Q4 2023, Nokia accelerated its strategy execution through providing its four business groups with increased operational autonomy and agility along with embedding sales teams directly into the business rather than the central sales organization the company has utilized until now. This will enable the business groups to better address opportunities in their distinctive markets with our existing and new customers. They will be empowered to diversify faster, build new ecosystem partnerships, implement new business models and invest for technology leadership.

Dedicated sales teams with a strong product and customer connection will enable business groups to better seize growth opportunities with our existing and new customers and diversify into enterprise, webscale and government sectors. This change will bring highly empowered teams in front of customers that are able to make quicker decisions based on their needs. Sales teams will collaborate across Nokia to ensure customers continue to benefit from the breadth of all Nokia offers.

Nokia's lean corporate center will act as a strategic architect, providing oversight in key areas, including target setting and performance management and portfolio development along with governance and compliance. The company will continue its commitment to long-term research through Nokia Bell Labs, as evidenced by its recent announcement of a new venture studio and venture capital partnerships to unleash the full commercial potential of Nokia Bell Labs technologies beyond the needs of Nokia's business groups.

Accompanying the move towards more autonomous business groups and to provide investors with greater transparency in assessing their financial performance, Nokia will begin reporting a cash flow metric and regional sales at the business group level in 2024.

Nokia 2016–2020 | Nokia 2021–2023 | Nokia 2024 and beyond

Our path to continued technology

leadership

As one of the industry's leading investors in communication technology research and development (R&D), we drive innovation across a comprehensive portfolio of network equipment, software, services and licensing opportunities.

Nokia's world-leading research and development

We have a global network of R&D centers, each with specialties and ecosystems built around both competencies and technologies. Most of our near- to mid-term R&D is conducted within the business groups' structures and is further elaborated in the business group-specific sections of this report.

Laying the path for Nokia's future technology innovation and identifying the most promising areas for new value creation

Beyond the R&D of our business groups, Nokia's dedicated Strategy and Technology (S&T) organization is focused on longer-term technology cycles. S&T is responsible for formulating a coherent corporate strategy and establishing a technology and architecture vision across the company. It is also overseeing the implementation of this vision in partnership with Nokia's business groups.

S&T drives company-wide internal technology alignment and, through the transfer of technologies to the business groups, contributes to the evolution of Nokia's portfolio to enable continued technology leadership.

Nokia Bell Labs

As Nokia's industrial research lab, Nokia Bell Labs solves human needs through the power of human intellect. Throughout its nearly 100-year history, Nokia Bell Labs has been bringing together the brightest minds in mathematics, physics, computing and engineering to work on the world's biggest scientific challenges. In 2023, we added our 10th Nobel Prize for work completed at Bell Labs with the Nobel Prize in Chemistry awarded to our alumnus Louis Brus.

Nokia Bell Labs' primary research areas are network fundamentals, automation, semiconductors and devices, AI and software systems. As an industrial research lab, we innovate with purpose, pursuing responsible, sustainable technologies that will have a demonstrable impact on society. Nokia Bell Labs believes that the best research is done in an inclusive, collaborative manner, taking multiple diverse points of view into account.

With Nokia Bell Labs, we continue our heritage of pioneering significant innovations in the essential technologies driving communication networks and systems. Many of the fundamental technologies that are used in 5G standards were invented at Nokia, and now we are focused on technology leadership beyond 5G. We are finalizing standardization work for the first release of the 5G-Advanced era, known as

Nokia continues to be at the forefront of 6G research. Since January 2023, we have led Hexa-X-II, the second phase of the European Commission's flagship 6G initiative for research into the next generation of wireless networks. In 2023, Nokia also launched a first-of-its-kind 6G Lab in India to research foundational 6G technologies like network as a sensor, network exposure and automation.

In 2023, we achieved two key technological milestones on the path to 6G. First, the implementation of AI and machine learning (ML) into the radio air interface, effectively granting 6G radios the ability to learn. Secondly, we utilized new sub-terahertz (sub-THz) spectrum frequencies to substantially increase network capacity. At the 2023 Mobile World Congress, we presented a live demonstration of a 6G joint communication and sensing proof-of-concept.

In 2023, Nokia Bell Labs also set four new world records for submarine optical communications, and optical and fixed networks with research that set a path to long-term technology leadership in the next generation of network infrastructures.

Nokia Bell Labs is also at the forefront of non-traditional network research with a focus on AI and machine learning that is needed for future advanced communication capabilities. We believe it is important to develop AI in an ethical, responsible and sustainable way, and this led us to create a cross-organization AI Center of Excellence.

Nokia Bell Labs has had recent success in collaborating with government agencies and businesses on distinct commercial contracts. This includes additional funded agreements with the US Government for the future of space communication and lunar communication architecture studies with Nokia Bell Labs being chosen by DARPA for the LunA-10 Capability Study to design an integrated multi-service architecture to support a thriving economy on the Moon in the next decade and beyond. Nokia Bell Labs is regarded as a leading industry and thought leader on lunar surface communication networks, which NASA recently recognized by giving it the FY2023 NASA Langley Research Center Large Business Prime Contractor of the Year Award. Nokia Bell Labs also signed a memorandum of understanding with Aramco Digital for joint R&D collaboration and innovation on digitalization and industrial automation use cases.

Nokia Bell Labs continues to explore new concepts that could lead to growth in both neighboring and nascent markets. We launched UNEXT, a new research initiative for a future Network Software System that creates a unified networking experience for autonomous service creation leveraging distributed computing and new business environments. Just as Bell Labs' invention of UNIX transformed computing, our UNEXT research initiative is poised to transform networking, by breaking down barriers that have traditionally prevented network elements from interoperating.

Nokia is actively engaged in leading and influencing standards and developing new standard-essential patents (SEPs), shaping future technologies and systems while strengthening its IPR portfolio.

We also pursue future growth platforms through investment in NGP Capital innovation funds, and the in-house incubation and commercialization of venture projects. In 2023, we saw our first venture projects going to market and winning their first customer deals.

We also launched new venture capital partnerships with America's Frontier Fund, Roadrunner Venture Studios and Celesta Capital to aid in the creation and funding of spinouts that can maximize the commercial potential of Nokia Bell Labs innovations and the creation of long-term value for Nokia.

In S&T, we are also focused on enabling Nokia to evolve as a best-in-class digital enterprise and identifying security requirements, trends and evolving risks, to position Nokia as a trusted security partner for the 5G era and beyond.

Our Technology Strategy 2030

The network is critical to realizing the enormous range of potential that emerging innovations and technologies such as AI, the metaverse and the cloud open in the communication provider, industrial, enterprise and consumer spheres as we approach 2030.

In 2023, we revealed our Technology Strategy 2030, a roadmap to emerging technologies and future network architecture. Unparalleled technological advancement will drive major changes in the way we live and work in the upcoming decade.

The network and digital economy interplay

Evolution of network technologies will shape the future of the digital era

The global rate of technology adoption will be impacted by trends such as a deepening focus on environmental sustainability, cybersecurity and inclusion. Advances in semiconductors, software, artificial intelligence and machine learning, metaverse technologies, Web3 and cloud technologies will continue to accelerate. These technologies will significantly extend the scope of what is possible, connecting and merging the human, physical and digital worlds to help solve some of the greatest global challenges we face.

Building on our Technology Vision 2030, describing how we expect emerging technologies to impact the world in the coming years, Nokia’s Technology Strategy 2030 outlines the insights, priorities and actions necessary for businesses to remain proactive in response to these accelerating technological advancements and the digital economy interplay and how, together with our customers and the industry, we must evolve networks to meet the challenges of tomorrow and beyond.

Network demand continues to accelerate

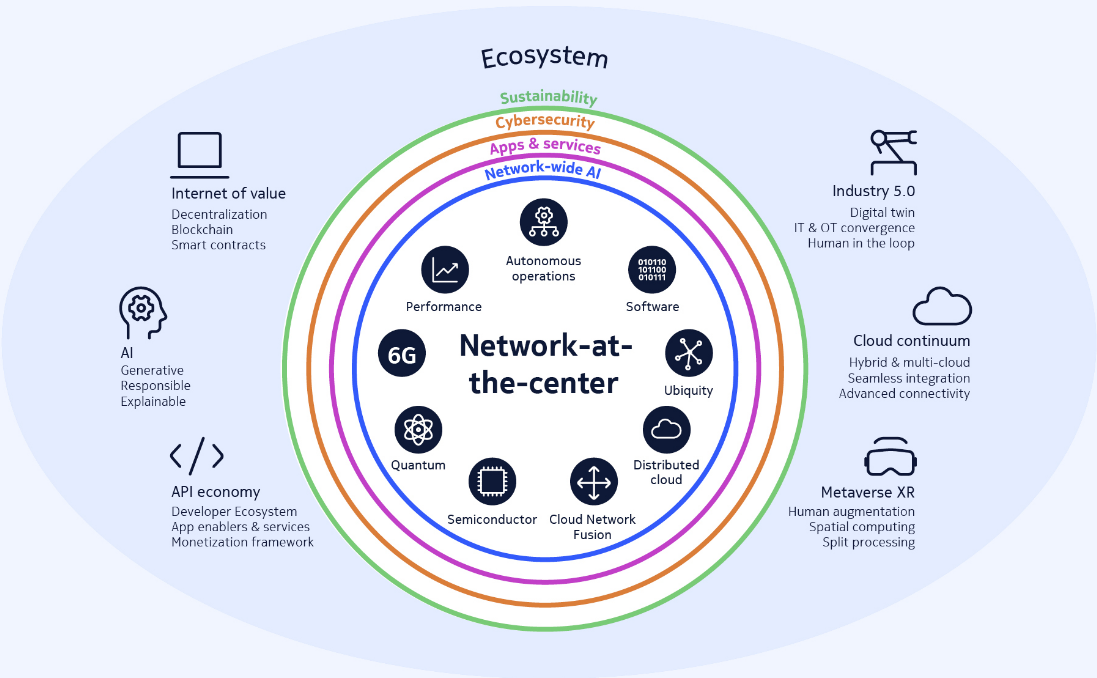
Network traffic is continuing to grow and will rise dramatically as AI, ML, extended reality (XR), digital twins, automation, and billions of additional devices proliferate. According to our new Global Network Traffic 2030 report, end-user data traffic demand will increase at a compounded annual growth rate of 22% to 25% from 2022 through 2030 and global network traffic demand is expected to reach between 2 443 and 3 109 exabytes per month in 2030.

Our Technology Strategy 2030 addresses the interplay of expanding technologies, the impact on network capabilities and demand and how Nokia will stay ahead of evolving customer requirements. In the years ahead, networks will undergo significant evolution and must become cognitive and automated ecosystems capable of addressing the transformative needs and operating models of diverse organizations, industries and consumers.

Future network architecture

The network architecture of the future will need to be more dynamic and agile, to swiftly adapt to the shifting landscape of applications and service demands, as well as new business and operating models. We have developed a future network architecture that leverages network digital twin technology as a central building block. The architecture brings networks and clouds together to optimize both the user experience and resource utilization. This future network brings enhancements in management and orchestration with the help of digital twin technology and AI to deliver optimal life-cycle management of deployed assets and applications. Unified Application Programming Interfaces (APIs) facilitate the development of an ecosystem where services and applications can be easily developed, deployed, and interoperated through the network.

To achieve our goals over the coming years we will continue to anticipate future challenges for our customers and understand how emerging technologies impact their evolving networks,



Milestones

1865
Founded as a single paper mill operation

1960s
Nokia became a conglomerate comprising rubber, cable, forestry, electronics and power-generation businesses

2007
Entered a joint venture with Siemens, combining mobile and fixed-line phone network equipment businesses and creating Nokia Siemens Networks (NSN)

1865 → 1960 → 2000

Innovations

1926
Brought sound to motion pictures*

1947
Developed the transistor, a tiny device that revolutionized the entire electronics industry*

1954
Created the solar cell, enabling the conversion of the sun's energy into electricity*

1958
Developed the laser, creating the foundation for fiber optics*

1962
Launched the first communications satellite, Telstar 1, into orbit enabling the first ever broadcast of live television between the US and Europe*

1969
Developed Unix, the software system that made the large-scale networking of diverse computing systems and the internet practical*

1982
Introduced both the first fully digital local telephone exchange in Europe and the world's first NMT car phone

1991
Enabled the first GSM call using a Nokia phone over the Nokia-built network of Finnish communications service provider Radiolinja

1998
Became the world's largest manufacturer of mobile phones

2001
Invented MIMO (Multiple-Input and Multiple-Output), a key element of a large number of modern wireless systems, that allows for greater throughput without increasing bandwidth requirements*

2006
Developed Softrouter, a routing architecture permitting the development of a programmable, open network infrastructure to allow easier deployment of new services that make use of exposed network capabilities*

* Bell Telephone Laboratories (1925-1984). Following its acquisition by Nokia in 2016, it was renamed Nokia Bell Labs.

2011
Entered a strategic partnership with Microsoft to address increasing competition from iOS and Android operating systems

Acquired the wireless network equipment division of Motorola

2013
Purchased Siemens' stake in NSN

2014
Sold the Devices and Services business to Microsoft

2016
Acquired Alcatel-Lucent, including Bell Labs, creating an innovation leader in next-generation technology and services

2017-
Additional acquisitions enhancing our technology leadership such as: Deepfield, the US-based leader in real-time analytics for IP network performance management and security; Comptel, a Finland-based telecommunications software company; Unium, a Seattle-based software company that specializes in solving complex wireless networking problems for use in mission-critical and residential Wi-Fi applications; and Elenion, a US-based company focusing on silicon photonics technology

2023
Renewed Nokia brand to establish a clear position for Nokia as a B2B technology innovation leader

Continued to actively manage its business portfolio, e.g. through the agreed sale of its Device Management and Service Management Platform businesses, and the divestment of its VitalQIP products. Announced the acquisition of Fenix Group

2012 → 2017 → 2023

2014
Developed XG-FAST technology, enabling service providers to generate fiber-like speeds of more than 10Gbps over short distances using existing copper infrastructure

2017
Developed Probabilistic Constellation Shaping, an innovative technology to get the most out of each fiber, irrespective of its length and capabilities

2019
Opened the world's first live end-to-end 5G lab, the Future X Lab in Murray Hill, New Jersey, US

2020
Selected by NASA to build and deploy the first end-to-end LTE solution on the lunar surface

Enabled commercial deployment of the world's first 5G liquid cooling solution

Set the 5G speed world record

2021
Developed the Resh programming language to take control of and manage a fleet of robots

2022
Showcased the first 100Gb/s fiber broadband technology in the US

Launched the Advanced Security Testing and Research (ASTaR) lab in Dallas – the first end-to-end 5G testing lab in the US focused solely on cybersecurity

Introduced the 6 pillars of Responsible AI

2023
Achieved two key 6G technological milestones: the implementation of AI and machine learning into the radio air interface and proof-of-concept of 6G joint communication and sensing capability

Added our 10th Nobel Prize for work completed at Bell Labs, with the Nobel Prize in Chemistry awarded to our alumnus Louis Brus

World-record 2.4 Tb/s optical transmission over a single wavelength

IP Networks is the leading global vendor in IP edge routing in EMEA[2] and holds the number two position in the global total routing market (excluding China)[3]. The business delivers high-performance IP access, aggregation, edge and core routing solutions with a focus on service provider, mission-critical enterprise, and webscale networks. Named a 'leader' and 'outperformer' in 2023 for data center fabric solutions by Gigaom, we deliver advanced data center networking solutions for telco, webscale and enterprise cloud requirements. In 2023, we continued to lead the market in next generation 800 Gigabit Ethernet IP routing, announcing wins with Nomios Group for the GÉANT European research network and with etisalat by e& UAE. We were chosen to deploy 800GE links in the world's fastest live supercomputing network showcase at the SC 2023 conference. IP Networks expanded its portfolio during the year with the launch of the 7730 Service Interconnect Router product family and FPcx fully programmable routing silicon. This will bring the power of Nokia's routing portfolio to new parts of the network and new mission-critical and CSP customers.

Optical Networks is a leader in optical transport networks for metro, regional and long-haul applications and collaborates with our Submarine Networks on innovation-led subsea applications. We hold the number two position in the optical market worldwide, excluding China[4]. We have more than 100 customers for our fifth generation Photonic Service Engine coherent digital signal processor, PSE-V, which was launched in 2020. And, in Q1 2023, we announced the PSE-6s, a ground-breaking new solution that sets new milestones in scale, performance and sustainability for optical transport networks. These include unmatched 2.4Tb/s scale; three times the previous reach for 800 Gigabit per second (Gb/s) wavelengths and sustainable network evolution with 60 percent less network power consumption per 100 Gbit equivalent, by comparison with earlier generations. PSE-6s was used by GlobalConnect to demonstrate a record-breaking 1.2Tb/s coherent transmission over a single wavelength in a live network and has also been demonstrated in live networks by customers including Colt and network wholesaler, lyntia.

Submarine Networks continues to be a leader in the growing undersea telecoms networks segment[5], which today carries 99% of worldwide internet traffic. As the industry's only end-to-end turnkey supplier, Submarine Networks is able to capitalize on projects from a diverse range of customers including CSPs, hyperscalers, private investors and energy solutions companies. With a substantial backlog of projects supporting demand in 2024 and 2025, Submarine Networks has significant long-term prospects, which we are addressing with investments in R&D in areas including capacity increase, terrestrial/submarine integration and solutions in the area of environmental standard development.

Competition

Our competitors include Huawei and ZTE, along with Calix and Adtran (Fixed Networks), Cisco and Juniper (IP Networks), Ciena and Infinera (Optical Networks), and Subcom and NEC (Submarine Networks).

(1) Number one position globally in xPON OLT shipments and number one in XGS-PON OLT/ONT globally. Number one in G.fast globally. All data, Dell'Oro, September 2023.
(2) Dell'Oro, 2Q23 four-quarter rolling average.
(3) Dell'Oro 2Q23.
(4) Omdia Q3 2023.
(5) Nokia's own estimate.

2.4 Tb/s

Optical transport enabled by Nokia's new PSE-6s super coherent optical engines

150 million

We also launched anyRAN, a new approach that leverages collaboration with leading cloud infrastructure and computing hardware suppliers. The approach offers flexibility of choice for operators and enterprises on their evolution path towards Cloud RAN and ensures high performance, energy efficiency, resiliency, service and feature parity, and security across hybrid networks of co-existing Cloud RAN and purpose-built RAN.

We continued integrating artificial intelligence and machine learning capabilities into our products and solutions, for example in our new network management solutions, as well as in services where AI/ML-based safety crew checks, digital site surveys and driverless acceptance solutions improve the health, safety and service delivery quality of our field teams.

Furthermore, we introduced new radios in our Wavence microwave transport portfolio, which help expand 5G capacity and coverage, to support the connectivity needs of communications service providers, enterprises and industries.

Mobile Networks proactively develops new approaches to building networks. In 2023 for example, we showcased an industry-first successful aggregation of 5G Standalone spectrum using Five Components Carrier Aggregation (5CCA) in sub-6 GHz spectrum, together with Qualcomm and T-Mobile in the US. Nokia also achieved sustained average downlink speeds of over 2 Gbps using millimeter wave spectrum for 5G Fixed Wireless Access, over a distance of almost 11 kilometers. With AST SpaceMobile, we achieved 5G cellular broadband connectivity from space using everyday smartphones with Nokia technology.

Competition

The RAN market is a highly consolidated market. Our main competitors are Huawei, Ericsson, Samsung and ZTE, but there are also a number of smaller competitors competing in specific technology or regional sub-segments, such as NEC and Fujitsu. In microwave, our key competitors include Ceragon, NEC and Aviat, alongside Huawei and Ericsson.

(1) Excluding China, Russia and Belarus.
(2) Dell'Oro Group Inc., Mobile RAN quarterly report 4Q23 (rolling 4Q).

#2

in 4G/5G Radio Access Networks global market share, excluding China

319

Commercial 5G deals

During the year, we made solid progress actively managing our portfolio, with announcements to divest Nokia's VitalQIP products to Cygna Labs Corp; to make Red Hat the primary infrastructure platform for Nokia Core Network applications; and to sell Nokia's Device Management and Service Management Platform businesses to Lumine Group Inc.

Competition

The market in which we compete has vendors and other industry participants which may on occasion be a customer, a partner, or a direct competitor, depending on the nature of the engagement. We are regularly building and nurturing alliances with partners such as IT vendors, hyperscalers, and systems integrators, which are increasingly influential in this space.

The competitive environment comprises many networking companies, infrastructure and application software suppliers, services specialists, hyperscalers, cloud providers, and a wide range of industry segment businesses.

In 2023, Nokia was ranked #1 again by Omdia for our Core portfolio breadth and competitiveness strength(1); rated #1 again in automated assurance by Analysys Mason(2); rated #1 in network automation software by Appledore Research(3); rated by Kaleido Intelligence as the #1 Champion in Private Network Hardware, Private Network Software, and Private Network Management(4); rated as a leader in service orchestration by GlobalData(5); and ranked as an industry leader in network security by GigaOm for our extended detection response market (XDR) security platform(6).

Nokia had the most CSP customers of 5G Standalone Core in the industry, with a total of 107 at the end of 2023.

We continued to have marketplace leadership in private wireless networking with 710 customers; of which 159 are 5G.

(1)Omdia Market Landscape: Core 2023, June 2023.
(2)Analysys Mason, Automated assurance: worldwide market shares 2022, September 2023.
(3)Appledore Research, Leading Suppliers in Network Automation Software, June 2023
(4)Kaleido Intelligence, Connectivity Vendor Hub: Private Networks 2023, 24 October, 2023.
(5)GlobalData, Network Service Orchestration: Competitive Landscape Assessment, August 2023.
(6)GigaOM, GigaOm Radar for Extended Detection and Response (XDR), April 2023.

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107

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We continued to have marketplace leadership in private wireless networking with more than

710

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159

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Brand Partnerships: Nokia has a strategic agreement with HMD Global Oy (HMD) granting HMD an exclusive global license to create Nokia-branded mobile phones and tablets. Under the agreement, Nokia receives royalty payments from HMD for sales of Nokia branded mobile phones and tablets, covering both brand and patent licensing. The licensing agreement will expire by March 2026. In September 2023, HMD announced plans to transition to a multi-brand strategy which will include an HMD original range along with Nokia branded phones.

Innovation and standards leadership

Nokia has defined many of the fundamental technologies used in virtually all mobile devices and has a leading role in open standardization. Since 2000, Nokia has invested around EUR 150 billion in research and development (R&D). As a result, we own one of the broadest and strongest patent portfolios in the telecommunications sector with around 20 000 patent families (each family can comprise several individual patents). We own a leading share of Standard Essential Patents (SEPs) in every generation of cellular standards, with over 6 000 patent families declared as essential to the 5G standard. Our portfolio also covers significant multimedia assets, particularly in video compression technology, which allows large files to be shared across the internet. The work of Nokia's inventors in video research and standardization has been recognized with numerous prestigious awards, including five Technology & Engineering Emmy® Awards.

Our inventors also continue to lead in voice communication. *In 2023, the Third Generation Partnership Project (3GPP) selected the Immersive Voice and Audio Services (IVAS) codec, developed together with our partners, as the next generation voice coding standard.* IVAS brings spatial audio to mobile communications for the first time, enabling more immersive calls by capturing and sharing the full spatial audio scene.

Nokia was one of the first companies in the world to achieve the globally recognized ISO 9001 certification for our high-quality patent portfolio management processes. Our patent portfolio has a long lifetime, with the vast majority of patents still in force in ten years' time. We continue to refresh our portfolio with new inventions every year. In 2023, we filed patent applications on more than 2 300 new inventions, enabling 5G networks, connected 5G devices and more.

As we continue to invest heavily in R&D and standardization, the annual number of filings is expected to grow.

6 000+

patent families declared as essential to the 5G standard

5 000+

multimedia inventions

Supply chain, sourcing and manufacturing

In 2023, Nokia's supply chain delivery capability was fully restored after the previous years' constraints. This year, we focused on managing customer demand and further developing our risk management capabilities. We continued to optimize our manufacturing, distribution and supplier network across the regions.

Nokia's supply chain is essential for our customers, our business, and for managing customer demand and supply for our hardware, software and contract manufactured products. Our end-to-end operations include sourcing, demand and supply planning, manufacturing, distribution and logistics.

In 2023, we purchased over EUR 13 billion worth of products and services from around 10 000 different suppliers.

While the volatile geopolitical operating environment continued to pose challenges to our supply chain management in 2023, global semiconductor shortages no longer created similar disruptions as in the past few years.

Focus on risk and cost management

Throughout 2023, we saw a softening of the global demand for our equipment, linked to the overall macroeconomic situation, as well as inventory digestion by some customers. In this context, we continued to work closely with our customers to form the best possible forecast outlook in the mid and long term. In addition, we had a strong focus on inventory management to offset potential excess risks.

Furthermore, we developed our risk management capabilities supported by increased digitalization and automation to navigate the rapidly changing business environment. Inventories and safety buffers were largely kept upstream on a component level, increasing the flexibility to react to any potential short-term product type changes.

Cost inflation throughout the supply chain continued to impact our margins, but through sustained focus on improving our product cost and careful management of our customer pricing, we were able to keep this under control.

Building resilience through strong partnerships and a regional approach

As we further develop a robust and sustainable supply chain that can best serve our customers, maintaining focus on resilience is critical. We continuously optimize our manufacturing, distribution and supplier network across the regions in which we operate to better serve our customers. We also further leverage artificial intelligence and machine learning capabilities to better develop our supply chain and factory network.

Our geographically dispersed manufacturing network consists of both our own manufacturing (18% of the network) and contract manufacturing partners to minimize geographic and geopolitical risks. Our network is strategically located around the world which breaks down by number of sites as: Europe 23%, Asia Pacific, Japan/India 30%, China 35% and the Americas 13%. Each year our spending by location will vary depending on our regional demand and in 2023 our spending was approximately broken down as: Europe 27%, Asia Pacific, Japan/India 42%, Greater China 18% and Americas 13%.

Our regional approach will not only enable us to deliver a more rapid response to our customers' needs, but also reduce transportation costs and CO_2 emissions.

Sustainability enablement and innovation

We clearly communicate our Third-party Code of Conduct and Nokia Supplier Requirements, incorporating the Responsible Business Alliance (RBA) Code of Conduct requirements, to our suppliers. These include standards for responsible sourcing in key areas such as the environment and human rights. Adherence to the standards is checked through audits and EcoVadis documentation assessments, before being followed-up via one-on-one sessions and webinars on various ESG topics.

In 2023, we conducted supplier on-site audits to ensure good visibility over labor rights, health and safety and environmental issues. The number of audits significantly increased during 2023 as COVID-related restrictions were removed.

We are committed to cutting greenhouse gas emissions across our value chain by 50% by 2030, in line with our science-based target. Our own factories are on track to reach 100% renewable electricity by 2025. We also work closely with the entirety of our supply chain to develop new digital solutions and product innovations to cut emissions.

In 2023, we continued to work with our electronics manufacturing services suppliers to track their roadmap activities as we look to achieve the mutually agreed target that the Nokia portion of their manufacturing reaches net zero by 2030. We also expanded deep dives into the roadmap designs for our energy-intense component supplier categories such as integrated circuits, semi-discretes, and printed wiring boards. As part of our circularity program, we introduced recycled material content targets to our mechanical suppliers and we recognized supplier climate and circularity innovations via our Supplier Diamond Award.

"Design for Environment" is an integral part of our supply chain sustainability strategy. It aims to ensure Nokia products are in line with our policies and goals for product stewardship and environmental sustainability. We therefore continued to collaborate with our suppliers to encourage sustainable solutions in transportation, logistics and packaging, using alternative materials and optimized designs to deliver sustainable product packaging, reducing use of virgin plastics, and increasing recycled content materials. As an example, this year we have deployed FiberFlute and honeycomb cardboard solutions to replace plastic cushions in some product deliveries. Moreover, we are piloting other fiber-based solutions to replace plastic in our repair centers and are studying implementation on a wider scale.

Supply chain logistics is one of the areas in which we constantly look for innovative ways to reduce our carbon footprint. As an example, together with DHL Global Forwarding (DGF), we redesigned one of our key intercontinental logistics routes. Using a combination of transport modes, we were able to reduce the use of air freight with a resulting 68% reduction in transport carbon emissions compared to the previous logistics model.

We are committed to prioritizing and strengthening resilience and sustainability across the end-to-end supply chain to help us deal effectively with challenges that arise. See the "Sustainability and corporate responsibility" section for more information on Nokia's sustainability targets and achievements, including those related to supplier sustainability.

Own manufacturing

As of 31 December 2023, the production capacity for sites owned by us is noted below:

Country	Location and products(1)	Productive capacity, net (m²)(2)
China	Suzhou: radio frequency systems(3)	13 500
Finland	Oulu: base stations	10 000
France	Calais: submarine cables	61 000
Germany	Hannover: radio frequency systems(4)	23 500
India	Chennai: base stations, radio controllers and transmission systems, fixed networks	15 500
UK	Greenwich: submarine cables	11 000

(1)We consider the production capacity of our manufacturing network to be sufficient to meet the requirements of our business. The extent of utilization of our manufacturing facilities varies from plant to plant and from time to time during the year. None of these facilities is subject to a material encumbrance. During 2023, Nokia disposed of the following sites: 1) Trignac: radio frequency systems (France), 7 300 m^2 net productive capacity, 2) Meriden: radio frequency systems (USA), 31 000 m^2 net productive capacity, and 3) Bydgoszcz: remanufacturing, product integration (Poland), 15 200 m^2 net productive capacity. During 2022, manufacturing activities ended at the following site: Kilsyth: radio frequency systems (Australia), 5 400 m^2 net productive capacity.

(2)Production capacity equals the total area allotted to manufacturing and to the storage of manufacturing-related materials.

(3)In December 2022, Nokia entered into an agreement regarding the disposal of this site, and during 2023, Nokia partially disposed of the site. As of 31 December 2023, the site's productive capacity totaled 27 000 m^2, of which the net productive capacity attributable to Nokia was 13 500 m^2. The disposal of the remaining net productive capacity is expected to be completed during 2024.

(4)Nokia has entered into an agreement on the disposal of this site. The disposal is expected to be completed during 2024.

Select highlights in our corporate governance during 2023

- Our 2023 Annual General Meeting saw a record number of shareholders and votes represented and strong shareholder support for all the Board's proposals.
- We were proud to lead the introduction of the individual director election method in the Finnish market and provide our shareholders with the opportunity to consider each candidate separately in our 2023 Annual General Meeting.
- We implemented the Executive Officer Clawback Policy, meeting the NYSE listing standards issued in response to the US Securities and Exchange Commission's 2023 rules implementing the incentive-based compensation recovery provisions of the Dodd-Frank Act. In addition, we refreshed our all-employee Clawback Policy on incentive compensation.
- We were pleased to host multiple meetings with our largest shareholders to discuss Nokia's sustainability, remuneration and governance approach.

This corporate governance statement is prepared in accordance with Chapter 7, Section 7 of the Finnish Securities Markets Act (2012/746, as amended) and the Finnish Corporate Governance Code 2020 (the "Finnish Corporate Governance Code").

Regulatory framework

Our corporate governance practices comply with Finnish laws and regulations, our Articles of Association approved by the shareholders and corporate governance guidelines ("Corporate Governance Guidelines") adopted by the Board of Directors. The Corporate Governance Guidelines reflect our commitment to strong corporate governance. They include the directors' responsibilities, the composition and election of the members of the Board and its Committees, and certain other matters relating to corporate governance. We also comply with the Finnish Corporate Governance Code adopted by the Securities Market Association.

We follow the rules and recommendations of Nasdaq Helsinki and Euronext Paris as applicable to us due to the listing of our shares on these exchanges. Furthermore, as a result of the listing of our American Depositary Shares on the New York Stock Exchange (NYSE) and our registration under the US Securities Exchange Act of 1934, we follow the applicable US federal securities laws and regulations, including the Sarbanes-Oxley Act of 2002 as well as the rules of the NYSE, in particular the corporate governance standards under Section 303A of the NYSE Listed Company Manual. We comply with these standards to the extent such provisions are applicable to us as a foreign private issuer.

To the extent compliance with any non-domestic rules would conflict with the laws of Finland, we are obliged to comply with Finnish laws and applicable regulations. There are no significant differences in the corporate governance practices applied by Nokia compared with those applied by US companies under the NYSE corporate governance standards with the exception that Nokia complies with Finnish law with respect to the approval of equity compensation plans. Under Finnish law, stock option plans require shareholder approval at the time of their launch.

Main corporate governance bodies of Nokia

Pursuant to the provisions of the Finnish Limited Liability Companies Act (2006/624, as amended) (the "Finnish Companies

Act"), the legislation under which Nokia operates, and Nokia's Articles of Association, the control and management of Nokia are divided among shareholders at a general meeting, the Board, the President and CEO and the Group Leadership Team, chaired by the President and CEO.

General Meeting of Shareholders

Nokia's shareholders play a key role in corporate governance, with our Annual General Meeting offering a regular opportunity to exercise their decision-making power in Nokia. In addition, at the meeting the shareholders may exercise their right to speak and ask questions.

Each Nokia share entitles a shareholder to one vote at general meetings of Nokia. The Annual General Meeting decides, among other things, on the election and remuneration of the Board, the adoption of annual accounts, the distribution of retained earnings shown on the balance sheet, discharging the members of the Board and the President and CEO from liability, as well as on the election and fees of the external auditor and the sustainability reporting assurer. The Remuneration Policy is presented to the general meeting at least every four years and the Remuneration Report annually. Resolutions of the general meeting regarding the policy and the report are advisory in nature.

In addition to the Annual General Meeting, an Extraordinary General Meeting may be convened when the Board considers such a meeting to be necessary, or when the provisions of the Finnish Companies Act mandate that such a meeting must be held.

The Finnish Companies Act was amended on 11 July 2022 to enable limited liability companies to hold hybrid and virtual-only general meetings. A virtual general meeting, as defined by the Finnish Companies Act, is a meeting held without a physical meeting venue, where shareholders must be able to exercise their shareholder rights in full by virtual means, including voting in real time and asking questions orally during the meeting. We believe the Finnish legislation can be considered a leading example of protecting shareholders' rights in virtual general meetings. Once reliable technical methods for automated foreign shareholder identification become available in Finland, virtual general meetings are expected to improve the position of nominee-registered private shareholders residing outside of Finland, who may have been unable to attend the general meeting in person or be represented by proxy. The benefits of virtual general meetings would further include the ability of the Company to hold a general meeting also under extraordinary external circumstances such as navigating through restrictions on physical gatherings.

In accordance with the Finnish Companies Act, the articles of association must be amended to hold a general meeting virtually, necessitating a two-thirds qualified majority of shares and votes. After consulting with its largest shareholders, Nokia is proposing to the Annual General Meeting 2024 such amendment to its Articles of Association to allow virtual meetings in extraordinary external circumstances and to be prepared for all general meeting formats. Having the option of virtual meetings included in the Articles would not preclude in-person meetings and shareholders' rights would always be protected as a first priority regardless of the meeting format.

Annual General Meeting 2023 and 2024

The Annual General Meeting 2023 took place at Messukeskus Siipi, the Helsinki Expo and Convention Centre, on 4 April 2023. We were pleased to see the record number of votes cast as well as the strong shareholder support received for all the Board's proposals at the Meeting. For the second consecutive year, the turnout for the vote stood at a record high level. Also, a record number of 108 603 shareholders representing approximately 3 190 million shares and 56.6% of all the shares and votes in the Company participated the Annual General Meeting.

Board of Directors

The operations of Nokia are managed under the direction of the Board, within the framework set by the Finnish Companies Act and Nokia's Articles of Association as well as any complementary rules of procedure as defined by the Board, such as the Corporate Governance Guidelines and the charters of the Board's Committees.

Election and composition of the Board of Directors

Pursuant to the Articles of Association of Nokia, we have a Board that is composed of a minimum of seven and a maximum of 12 members. The members of the Board are elected at least annually at each Annual General Meeting. The candidates are considered individually and those receiving the most votes shall be elected pursuant to the Finnish Companies Act. The term of the Board members begins at the close of the general meeting at which they were elected, or later as resolved by the general meeting, and expires at the close of the following Annual General Meeting. The Annual General Meeting convenes by 30 June annually.

Our Board's leadership structure consists of a Chair and Vice Chair elected annually by the Board and confirmed by the independent directors of the Board from among the Board members upon the recommendation of the Corporate Governance and Nomination Committee. The Chair of the Board has certain specific duties as stipulated by Finnish law and our Corporate Governance Guidelines. The Vice Chair of the Board assumes the duties of the Chair of the Board in the event the Chair is prevented from performing his or her duties. The independent directors of the new Board also confirm the election of the members and chairs for the Board's Committees from among the Board's independent directors upon the recommendation of the Corporate Governance and Nomination Committee and based on each Committee's member qualification standards. These elections take place at the Board's assembly meeting following the general meeting. The Corporate Governance and Nomination Committee aims to continually renew the Board to have an efficient Board of international professionals with a diverse mix of skills, experience and other personal qualities in line with the diversity principles established by the Board. The Corporate Governance and Nomination Committee considers potential director candidates based on the short- and long-term needs of the Company. In the process of identifying and selecting the candidates matching these needs and desired profiles, the Committee engages search firms and external advisers.

Board independence

In accordance with the Corporate Governance Guidelines adopted by the Board of Directors, the Nokia Board shall have a majority of directors who meet the criteria for independence as defined by the Finnish Corporate Governance Code (independent of both the Company and any significant shareholders who hold at least 10% or more of the total shares or voting rights of the Company) and the rules of the NYSE. Furthermore, all of the members of the Board Committees shall be independent Directors under the relevant criteria for independence required by the Finnish Corporate Governance Code and the applicable rules of the NYSE.

The Board will monitor its compliance with these requirements for director independence on an ongoing basis. Each independent director is expected to notify the Chair of the Corporate Governance and Nomination Committee, as soon as reasonably practicable, in the event that his or her personal circumstances change in a manner that may affect the Board's evaluation of such director's independence. The Board of Directors evaluates the independence of its members annually and, in addition to this, on a continuous basis with the assistance of the Corporate Governance and Nomination Committee.

Board diversity

The Board has adopted principles concerning Board diversity describing our commitment to promoting a diverse Board composition and how diversity is embedded into our processes and practices when identifying and proposing new Board

Current members of the Board of Directors

The Annual General Meeting held on 4 April 2023 elected ten members to the Board for a term ending at the close of the next Annual General Meeting. Sari Baldauf, Thomas Dannenfeldt, Lisa Hook, Jeanette Horan, Thomas Saueressig, Søren Skou, Carla Smits-Nusteling and Kai Öistämö were re-elected as Board members. Timo Ahopelto and Elizabeth Crain were elected as new Board members. Following the meeting, the Board re-elected Sari Baldauf to serve as Chair and re-elected Søren Skou as the Vice Chair of the Board for the same term.

The current members of the Board are all non-executive and for the term that began at the Annual General Meeting 2023, all Board members were determined to be independent of Nokia and its significant shareholders under the Finnish Corporate Governance Code and the NYSE rules, as applicable. There are currently six different nationalities represented on the Board and 50% of the Board members are female. In addition to biographical information of the Board members, the table in the upper right corner sets forth the number of shares and American Depositary Shares (ADS) held by the Board members. As at 31 December 2023, they held a total of 900 190 shares and ADSs in Nokia, representing approximately 0.02% of our total shares and voting rights excluding shares held by the Nokia Group.

Biographical details of the Board members

	Gender	Year of Birth	Nationality	Tenure(1)	Independent of the company and major shareholders	Shares(2)	ADSs(2)
Sari Baldauf (Chair)	Female	1955	Finnish	5	Independent	290 575	
Søren Skou (Vice Chair)	Male	1964	Danish	4	Independent	89 325	
Timo Ahopelto	Male	1975	Finnish	0	Independent	21 418	
Elizabeth Crain	Female	1964	American	0	Independent		22 771
Thomas Dannenfeldt	Male	1966	German	3	Independent	117 597	
Lisa Hook	Female	1958	American	1	Independent		35 626
Jeanette Horan	Female	1955	British	6	Independent		116 476
Thomas Saueressig	Male	1985	German	1	Independent	34 705	
Carla Smits-Nusteling	Female	1966	Dutch	7	Independent	135 973	
Kai Öistämö	Male	1964	Finnish	1	Independent	35 724	

Proposed members of the Board of Directors

Proposals of the Board of Directors to the Annual General Meeting 2024 were published on 25 January 2024. On the recommendation of the Corporate Governance and Nomination Committee, the Board proposes to the Annual General Meeting that the number of Board members be ten. Jeanette Horan has informed the Committee that she will no longer be available to serve on the Nokia Board of Directors after the Annual General Meeting. Consequently, on the recommendation of the Corporate Governance and Nomination Committee, the Board proposes that the following nine current Board members be re-elected as members of the Nokia Board of Directors for a term ending at the close of the next Annual General Meeting: Timo Ahopelto, Sari Baldauf, Elizabeth Crain, Thomas Dannenfeldt, Lisa Hook, Thomas Saueressig, Søren Skou, Carla Smits-Nusteling and Kai Öistämö.

Furthermore, the Board proposes, on the recommendation of the Corporate Governance and Nomination Committee, that Michael McNamara, former Executive Vice President and Chief Information Officer of Target Corporation, be elected to the Board for a term ending at the close of the next Annual General Meeting.

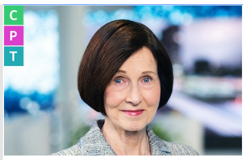
The Corporate Governance and Nomination Committee will propose in the assembly meeting of the new Board of Directors that Sari Baldauf be re-elected to serve as Chair of the Board and Søren Skou be re-elected to serve as Vice Chair of the Board, subject to their election to the Board of Directors. The Board composition proposed to the Annual General Meeting 2024 has representation of six nationalities and 40% of the proposed members are female.

The proposed members of the Board are non-exeucutive and for the term beginning at the Annual General Meeting 2024 they have been determined to be independent of Nokia and its significant shareholders under the Finnish Corporate Governance Code and the rules of the NYSE. Any possible changes impacting the independence assessment would be assessed as of the date of the Annual General Meeting.

The Corporate Governance and Nomination Committee has prepared the composition of the Board of Directors to the Annual General Meeting 2024 after assessing proposed Directors' external time commitments, taking into account shareholders' expectations in this regard.

While the prevailing Finnish market practice is to vote on the proposed Board composition as a slate, some of our investors have expressed their preference of being able to consider each director individually in accordance with global market practice. After leading the related change in market practice, Nokia was proud to be among the first Finnish listed companies providing our shareholders with the opportunity to consider each Board member candidate individually at our Annual General Meeting 2023. We are committed to continue individual director election in our forthcoming Annual General Meeting 2024 and onwards.

Biographical details of our current Board members



Chair Sari Baldauf

b. 1955

Vice Chair Søren Skou

b. 1964

Timo Ahopelto

b. 1975

Elizabeth Crain

b. 1964

Chair of the Nokia Board since 2020. Board member since 2018. Member of the Corporate Governance and Nomination Committee, the Personnel Committee and the Technology Committee.

Master of Business Administration, Helsinki School of Economics and Business Administration, Finland. Bachelor of Science, Helsinki School of Economics and Business Administration, Finland. Honorary doctorates in Technology (Helsinki University of Technology, Finland) and Business Administration (Turku School of Economics and Business Administration and Aalto University School of Business, Finland).

Executive Vice President and General Manager, Networks Business Group, Nokia 1998–2005. Various executive positions at Nokia in Finland and in the United States 1983–1998.

Chair of the Board of the Finnish Climate Leadership Coalition (CLC). Senior Advisor of DevCo Partners Oy.

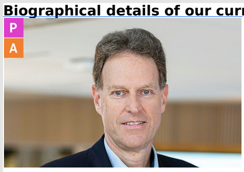
Member of the Board of Technology Industries of Finland 2021–2023. *Member of the Board of Directors of Aalto University 2018–2023.* Member of the Supervisory Board of Mercedes-Benz Group AG 2008-2023. Member of the Supervisory Board of Deutsche Telekom AG 2012–2018. Chair of the Board of Directors of Fortum Corporation 2011–2018. Member of the Board of Directors of Akzo Nobel 2012–2017.

Vice Chair of Nokia Board since 2022. Nokia Board member since 2019. Chair of the Corporate Governance and Nomination Committee and member of the Personnel Committee.

MBA (honours), IMD, Switzerland. Bachelor of Business Administration, Copenhagen Business School, Denmark. Maersk International Shipping Education (M.I.S.E.).

Chief Executive Officer of A.P. Møller – Mærsk A/S 2016–2022. Chief Executive Officer of Maersk Line 2012–2016. Chief Executive Officer of Maersk Tankers 2001–2011. Variety of executive roles, senior positions and other roles at A.P.

Biographical details of our current Board members continued



Thomas Dannenfeldt

b. 1966

Lisa Hook

b. 1958

Jeanette Horan

b. 1955

Nokia Board member since 2020. Chair of the Personnel Committee and member of the Audit Committee

Degree in Mathematics, University of Trier, Germany.

Chief Financial Officer of Deutsche Telekom AG 2014–2018. Chief Financial Officer of Deutsche Telekom's German operations 2010–2014. Various operational positions (sales, marketing, customer care, finance and procurement in fixed and mobile business, national and international positions) at Deutsche Telekom 1992–2010.

Chair of the Supervisory Board of Ceconomy AG and Chair of the Presidential Committee and Mediation Committee. Member of the Board of Advisors at axxessio GmbH.

Member of the Board of Directors of T-Mobile US 2013–2018 and Buy-In 2013–2018. Chair of the Board of Directors of T-Systems International 2013–2018 and EE Ltd. 2014–2016.

Nokia Board member since 2022. Member of the Personnel Committee and the Corporate Governance and Nomination Committee.

Juris Doctorate, Dickinson School of Law at Pennsylvania State University, United States. Bachelor's degree in Public Policy, Duke University, United States.

President and CEO of Neustar, Inc. 2010–2018 and COO 2008–2010. President and CEO of Sunrocket, Inc. 2006–2007. Executive positions at America Online, Inc. 2000–2004. Previous positions as Partner at Brera Capital Partners, managing director of Alpine Capital Group, LLC., various executive positions at Time Warner, Inc., legal adviser to the Chairman of the Federal Communications Commission, and General Counsel of the Cable Group at Viacom International, Inc.

Member of the Board of Directors of Fidelity National Information Services, Inc. Lead Independent Director of the Board of Directors of Philip Morris International. Member of the Board of Zayo Group. Chair of Advisory Board of Trilantic Capital Partners. Member of the US National Security Telecommunications Advisory Committee. Member of the Board of Directors of Ritchie Bros. Auctioneers Inc. 2021–2023, Ping Identity Holding Corporation 2019–2022, Partners Group Holdings 2020–2021, Unisys Corporation 2019–2021, Neustar, Inc. 2010–2019 and RELX Plc and RELX NV, 2006–2016.

Nokia Board member since 2017.

Biographical details of our current Board members continued

Thomas Saueressig

b. 1985

Carla Smits-Nusteling

b. 1966

Kai Öistämö

b. 1964

Member of the Executive Board of SAP SE and Global Head of SAP Product Engineering. Nokia Board member since 2022. Member of the Technology Committee.

Degree in Business Information Technology, University of Cooperative Education in Mannheim, Germany. Joint Executive MBA from ESSEC, France and Mannheim Business School, Germany.

Chief Information Officer of SAP SE 2016–2019, Vice President, Global Head of IT Services of SAP SE 2014–2016. Held various positions at SAP in Germany since 2007, including assignment in the SAP Labs Silicon Valley in Palo Alto, California, the United States.

Member of the Young Global Leaders of the World Economic Forum. Member of the Industry Advisory Board of the Munich Institute of Robotics and Machine Intelligence (MIRMI).

Nokia Board member since 2016. Chair of the Audit Committee and member of the Corporate Governance and Nomination Committee.

Master's Degree in Business Economics, Erasmus University Rotterdam, the Netherlands. Executive Master of Finance and Control, Vrije University Amsterdam, the Netherlands.

Member of the Board of Directors and Chief Financial Officer of KPN 2009–2012. Various financial positions at KPN 2000–2009. Various financial and operational positions at TNT/PTT Post 1990–2000.

Member of the Board of Directors and Chair of the Audit Committee of Allegro.eu SA. Member of the Board of Directors of the Stichting Continuïteit Ahold Delhaize (SCAD) foundation.

Chair of the Board of Directors of TELE2 AB 2013–2023. Lay Judge in the Enterprise Court of the Amsterdam Court of Appeal 2015–2022. Member of the Supervisory Board and Chair of the Audit

Operations of the Board of Directors

The Board represents and is accountable to the shareholders of Nokia. While its ultimate statutory accountability is to the shareholders, the Board also takes into account the interests of Nokia's other stakeholders. The Board's responsibilities are active, not passive, and include the responsibility to evaluate the strategic direction of Nokia, its management policies and the effectiveness of the implementation of such by the management on a regular basis. It is the responsibility of the members of the Board to act in good faith and with due care, so as to exercise their business judgment on an informed basis, in a manner that they reasonably and honestly believe to be in the best interests of Nokia and its shareholders. In discharging this obligation, the members of the Board must inform themselves of all relevant information reasonably available to them. The Board and each Board Committee also have the power to appoint independent legal, financial or other advisers as they deem necessary. The Company will provide sufficient funding to the Board and to each Committee to exercise their functions and provide compensation for the services of their advisers.

The Board is ultimately responsible for, and its duties include, monitoring and reviewing Nokia's financial reporting process, the effectiveness of related control and audit functions and the independence of Nokia's external auditor, as well as monitoring the Company's statutory audit. The Board's responsibilities also include overseeing the structure and composition of our top management and monitoring legal compliance and the management of risks related to our operations. In doing so, the Board may set annual ranges and/or individual limits for capital expenditures, investments and divestitures and other financial and non-financial commitments that may not be exceeded without a separate Board approval.

In risk management, the Board's role includes risk analysis and assessment in connection with financial, strategy and business reviews, updates and decision-making proposals. Risk management policies and processes are an integral part of Board deliberations and risk-related updates are provided to the Board on a recurring basis. For a more detailed description of our risk management policies and processes, refer to the "Risk management, internal control and internal audit functions at Nokia—Risk management principles" section.

The Board has the responsibility for appointing and discharging the President and Chief Executive Officer, Chief Financial Officer and Chief Legal Officer.

The Board approves and the independent directors of the Board confirm the compensation and terms of employment of the President and CEO, subject to the requirements of Finnish law, upon the recommendation of the Personnel Committee of the Board. The compensation and terms of employment of the other Group Leadership Team members are approved by the Personnel Committee upon the recommendation of the President and CEO.

Board oversight of environmental and social activities and governance practices

Under our Corporate Governance Guidelines, the Board evaluates Nokia's environmental and social activities and governance practices, related risks and target setting as well as their implementation and effectiveness across the Company.

In 2023, the Board reviewed our sustainability strategy and targets, approved the targets on climate change and diversity included in the short-term incentive program and monitored them and other ESG targets, as well as the evolving ESG requirements and expectations, investor feedback, our disclosure approach, and Nokia's net zero strategy and roadmap.

In addition, the Board Committees monitor environmental and social developments and activities in the Company in their respective areas of responsibilities. During 2023, the Audit Committee's responsibilities included the continued implementation planning of new climate- and other sustainability reporting requirements, preparing the proposal for election of the auditor carrying out the assurance of the

Key areas of focus for the Board's and its Committees' activities in 2023

The table below sets out a high-level overview of the key areas of focus for the Board's and its Committees' activities during the year.

	January	February/March	April	May	July	September/October	November
Board	–Business and financial reviews –Q4 and 2022 financials –AGM proposals, incl. profit distribution –Annual Policy and Charter review –Board evaluation –Review of CEO's performance, remuneration and targets	–Annual report and 20-F –Remuneration Report 2022	–Annual General Meeting (AGM) and appointing Board Chair, Vice Chair and Committee members –Business and financial reviews –Strategy –Q1 financials	–Business and financial reviews –Strategy –Geopolitical update –Product and customer security update –Digitalization update –Ethics & compliance update –Litigation update –People strategy and Group Leadership Team (GLT) succession approach update	–Business and financial reviews –Q2 financials –Strategy –Annual ESG review	–Annual strategy meeting –Geopraphical market deep-give –Business and financial reviews –Q3 financials	–Business and financial reviews –Strategy –Long-range forecast and annual target setting –Key risks review –GLT succession planning update –Investors' feedback on governance, remuneration and sustainability
Corporate Governance and Nomination Committee	–AGM proposals on Board composition and remuneration –Independence review –Corporate governance statement		–Committee compositions –Future Board composition –AGM shareholder feedback	–Planning of Board composition proposal		–Corporate governance and ESG-related developments in regulation –Planning of Board composition proposal –Board evaluation approach	–Board remuneration review and benchmarking –Annual assessment of director commitments –Finalizing Board composition proposal to the AGM –Annual Charter review
Personnel Committee	–Incentive achievements for 2022 –CEO and GLT performance –Incentive targets and objectives for 2023 –Long-term Incentive Plan (LTI) grant proposal for 2023 –Remuneration Report 2022			–LTI design for 2024–2026 –Equity plan status –AGM shareholder feedback –GLT remuneration –Culture update –GLT succession approach –Clawback Policy related regulation	–Remuneration Policy 2024 structure review –Executive Clawback Policy –LTI design for 2024–2026 –Human capital risk review, including physical safety –Committee adviser's market and benchmarking update	–Incentive Compensation Clawback Policy –LTI design for 2024–2026 –Human capital update –Remuneration Policy 2024 including shareholder consultation	–2024 incentive targets –LTI Plan 2024–2026 –Investor feedback –Planning of Remuneration Report for 2023 –GLT succession planning –Executive shareholding assessment –Annual Charter review
Audit Committee	–Q4 and 2022 financials –Auditor reporting –Ethics and compliance, internal audit and internal controls updates –AGM proposals to the Board –Annual Policy review	–Annual report and 20-F for 2022, including Sustainability reporting –Auditor reporting –Internal controls update	–Q1 financials –Auditor reporting –Ethics and compliance, internal audit and internal controls updates –Treasury update –IT and service security update –Tax update –Conflict Minerals Report		–Q2 financials –Auditor reporting –Ethics and compliance, internal audit and internal controls updates –Finance IT and digitalization	–Q3 financials –Auditor reporting –Ethics and compliance, internal audit and internal controls updates –ESG disclosure and reporting developments, processes and controls –IT and service security updates	–Treasury update –Pensions update –Audit, internal audit and internal controls updates –Privacy update –Annual Charter and Policy review
Technology Committee		–Updates on major innovation and technology trends –Review of strategic technology initiatives		–Updates on major innovation and technology trends –Review of strategic technology initiatives –Cybersecurity: product and customer safety		–Sustainability technology strategy –Updates on major innovation and technology trends –Review of strategic technology initiatives	–Updates on major innovation and technology trends –Review of strategic technology initiatives –Cybersecurity: product and

Board evaluation

In line with our Corporate Governance Guidelines, the Board conducts a comprehensive annual performance evaluation, which also includes evaluation of the Board Committees' work, the Board and Committee Chairs and individual Board members. The Board evaluation is conducted as a self-evaluation, typically with a detailed questionnaire, while an external evaluator is periodically engaged. Feedback is also requested from selected members of management as part of the Board evaluation process. The questions aim to measure and elicit feedback on the processes, structure, accountability, transparency, and effectiveness of the Board and to gain an overview of the issues that are areas of excellence, areas where the Board thinks greater focus is warranted and determining areas where the performance could be enhanced.

Each year, the results of the evaluation are discussed and analyzed by the entire Board and improvement actions are agreed based on such discussions. In 2023, the evaluation process was carried out as a thorough self-evaluation for a second consecutive year by using an external evaluation platform that included both numeric assessments and the possibility to provide more detailed written comments.

The questionnaire comprised areas such as Nokia purpose and strategy, Board agenda and meetings, and Board composition and dynamics, as well as information, reporting and risk management.

Meetings of the Board of Directors

The Board of Directors constitutes a quorum if more than half of its members are present. The Board held 15 meetings excluding Committee meetings during 2023. In total ten (67%) of these meetings were regular meetings in person or by video connection. The other five meetings were held in writing.

	Board meeting attendance		Board and Committee meeting attendance[1]	
Member	**Meetings**	**%**	**Meetings**	**%**
Sari Baldauf (Chair)	15/15	100	28/28	100
Søren Skou (Vice Chair)	15/15	100	23/23	100
Timo Ahopelto (as of 4 April 2023)	11/11	100	18/18	100
Bruce Brown (until 4 April 2023)	4/4	100	8/8	100
Elizabeth Crain (as of 4 April 2023)	11/11	100	19/19	100
Thomas Dannenfeldt	15/15	100	26/26	100
Lisa Hook	15/15	100	24/24	100
Jeanette Horan	14/15	93	24/25	96
Edward Kozel (until 4 April 2023)	4/4	100	7/7	100
Thomas Saueressig	15/15	100	19/19	100
Carla Smits-Nusteling	15/15	100	26/26	100
Kai Öistämö	15/15	100	24/24	100
Average attendance (%)		**99.4**		**99.7**

Directors meet without management in connection with each regularly scheduled meeting. According to Board practices, meetings without management present are only attended by non-executive directors. These meetings are chaired by the non-executive Chair of the Board. In cases where the non-executive Chair of the Board is unable to chair these meetings, the non-executive Vice Chair of the Board chairs the meeting. Additionally, the independent directors would meet separately at least once annually. In 2023, all members of the Board were non-executive and determined to be independent from Nokia and significant shareholders under the Finnish Corporate Governance Code and the rules of the NYSE.

Committees of the Board of Directors

In 2023, the Board of Directors had four Committees that assisted the Board in its duties pursuant to their respective

The Audit Committee

The following table sets forth the members of the Audit Committee and their meeting attendance in 2023:

Member	Attendance (meetings)	Attendance (%)
Carla Smits-Nusteling (Chair)	6/6	100
Timo Ahopelto (as of 4 April 2023)	4/4	100
Elizabeth Crain (as of 4 April 2023)	4/4	100
Thomas Dannenfeldt	6/6	100
Lisa Hook (until 4 April 2023)	2/2	100
Jeanette Horan	6/6	100
Edward Kozel (until 4 April 2023)	2/2	100
Average attendance (%)		**100**

The Committee consists of a minimum of three members of the Board who meet all applicable independence, financial literacy and other requirements as stipulated by Finnish law, the Finnish Corporate Governance Code and the rules of the

NYSE. As of 4 April 2023, the Audit Committee has consisted of the following five members of the Board: Carla Smits-Nusteling (Chair), Timo Ahopelto, Elizabeth Crain, Thomas Dannenfeldt and Jeanette Horan.

The Committee is responsible for assisting the Board in the oversight of:

- the quality and integrity of the Company's financial and non-financial reporting and related disclosures;
- the statutory audit of the Company's financial statements; including the sustainability reporting therein;
- the external auditor's qualifications and independence;
- the performance of the external auditor subject to the requirements of Finnish law;
- the performance of the Company's internal controls, risk management and the assurance function;
- the performance of the internal audit function;
- the Company's compliance with legal and regulatory requirements, including the performance of its ethics and compliance program;
- the monitoring and assessment of any related party transactions;
- the pension liabilities and taxation of the Company; and
- the processes and management related to the cybersecurity of the Company, including IT and services security.

In discharging its oversight role, the Audit Committee has full access to all Company books, records, facilities and personnel. The Audit Committee also maintains procedures for the receipt, retention and treatment of complaints received by Nokia regarding accounting, internal controls, or auditing matters and for the confidential, anonymous submission by our employees of concerns relating to accounting or auditing matters. Nokia's disclosure controls and procedures, which are reviewed by the Audit Committee and approved by the President and CEO and the Chief Financial Officer, as well as the internal controls over financial reporting, are designed to provide reasonable assurance regarding the quality and integrity of Nokia's financial statements and related disclosures. For further information on internal control over financial reporting, refer to the section "Risk management, internal control and internal audit functions at Nokia–Description of internal control procedures in relation to the financial reporting process".

Under the Finnish Companies Act, an external auditor is elected by a simple majority vote of the shareholders at the Annual General Meeting for one year at a time. The Audit Committee prepares the proposal to the shareholders for the election or re-election of the nominee, upon its evaluation of the qualifications and independence of the external auditor. Under Finnish law, the fees of the external auditor are also approved

The Corporate Governance and Nomination Committee

The following table sets forth the members of the Corporate Governance and Nomination Committee and their meeting attendance in 2023:

Member	Attendance (meetings)	Attendance (%)
Søren Skou (Chair as of 4 April 2023)	3/3	100
Sari Baldauf	5/5	100
Bruce Brown (until 4 April 2023)	2/2	100
Lisa Hook (as of 4 April 2023)	3/3	100
Carla Smits-Nusteling	5/5	100
Kai Öistämö	5/5	100
Average attendance (%)		**100**

The Committee consists of three to five members of the Board who meet all applicable independence requirements as stipulated by Finnish law, the Finnish Corporate Governance Code and the rules of the NYSE. As of 4 April 2023, the Corporate Governance and Nomination Committee has consisted of the following five members of the Board: Søren Skou (Chair), Sari Baldauf, Lisa Hook, Carla Smits-Nusteling and Kai Öistämö.

The Committee fulfills its responsibilities by:

- actively identifying individuals qualified to be elected members of the Board, as well as considering and evaluating the appropriate level and structure of director remuneration;
- preparing and evaluating the principles regarding Board diversity;
- preparing proposals to the shareholders on the director nominees for election at the general meetings, as well as director remuneration;
- monitoring and assessing the directors' current and planned time commitments outside the Nokia Board and their attendance at Nokia Board and Committee meetings;
- monitoring significant developments in the law and practice of corporate governance, including the sustainability-related governance trends and the directors' duties and responsibilities;
- assisting the Board and each Committee of the Board in its annual performance evaluation process, including establishing criteria to be applied in connection with such evaluations;
- developing and administering Nokia's Corporate Governance Guidelines and giving recommendations regarding them to the Board; and
- reviewing Nokia's disclosure in the corporate governance statement.

The Committee has the power and practice to appoint a recruitment firm to identify appropriate new director candidates.

The Personnel Committee

The following table sets forth the members of the Personnel Committee and their meeting attendance in 2023:

Member	Attendance (meetings)	Attendance (%)
Thomas Dannenfeldt (Chair as of 4 April 2023)	5/5	100
Sari Baldauf	5/5	100
Bruce Brown (until 4 April 2023)	1/1	100
Elizabeth Crain (as of 4 April 2023)	4/4	100
Lisa Hook (as of 4 April 2023)	4/4	100
Søren Skou	5/5	100
Average attendance (%)		**100**

The Committee consists of a minimum of three members of the Board who meet all applicable independence requirements as stipulated by Finnish law, the Finnish Corporate Governance Code and the rules of the NYSE. As of 4 April 2023, the Personnel Committee has consisted of the following five members of the Board: Thomas Dannenfeldt (Chair), Sari Baldauf, Elizabeth Crain, Lisa Hook and Søren Skou.

The Committee has overall responsibility for evaluating, resolving and making recommendations to the Board regarding:

- preparing the Remuneration Policy and the Remuneration Report;
- compensation and terms of employment of the Company's senior management;
- human capital management;
- all equity-based plans;
- incentive compensation plans, policies and programs of the Company affecting executives; and
- possible other significant incentive plans.

The Committee is responsible for preparing the Remuneration Policy, including Nokia's compensation philosophy and principles and ensuring that the Company's compensation programs are performance-based, designed to contribute to long-term shareholder value creation in line with shareholders' interests, properly motivate management and are aligned with the Remuneration Policy, as well as supporting overall corporate strategies.

The Committee also oversees human capital management and periodically reviews the personnel policies and practices of Nokia related to human capital management and social responsibilities relating to its employees , including Company culture, physical safety, employee wellbeing, morale, diversity, equity and inclusion, talent management and development, succession planning, resourcing, recruiting, attrition, retention and employee engagement.

The Technology Committee

The following table sets forth the members of the Technology Committee and their meeting attendance in 2023:

Member	Attendance (meetings)	Attendance (%)
Kai Öistämö (Chair)	4/4	100
Timo Ahopelto (as of 4 April 2023)	3/3	100
Sari Baldauf (as of 4 April 2023)	3/3	100
Bruce Brown (until 4 April 2023)	1/1	100
Jeanette Horan	4/4	100
Edward Kozel (until 4 April 2023)	1/1	100
Thomas Saueressig	4/4	100
Average attendance (%)		**100**

The Committee consists of a minimum of three members of the Board who meet applicable independence requirements as stipulated by Finnish law, the Finnish Corporate Governance Code and the rules of the NYSE and have such skills in innovation, technology and science matters as the Board determines adequate from time to time. As of 4 April 2023, the Technology Committee has consisted of the following five members of the Board: Kai Öistämö (Chair), Timo Ahopelto, Sari Baldauf, Jeanette Horan and Thomas Saueressig.

In its dialogue with and provision of opinions and advice to the management, the Committee will periodically review:

- the Company's technological competitiveness and new strategic technology initiatives as well as market trends, considering both organic and inorganic options to retain or attain competitiveness;
- the Company's approach to major technological innovations;
- key technology trends that may result in disruptive threats or opportunities and the proposals on how to adequately address them;
- high-level risks and opportunities associated with the Company's Research and Development Programs;
- embedding sustainability in the technology roadmaps; and
- the processes and management related to the cybersecurity of the Company, including product and customer security.

Group Leadership Team and the President and CEO

The Group Leadership Team is responsible for the operative management of Nokia. The Group Leadership Team is chaired by the President and CEO. The President and CEO's rights and responsibilities include those allotted to the President under Finnish law.

During 2023, the Group Leadership Team was complemented with the appointment of Esa Niinimäki, Chief Legal Officer, effective as of 25 January 2023.

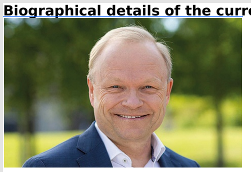
On 31 December 2023, the Group Leadership Team consisted of 11 members, including the President and CEO, representing six different nationalities. In total 27% of the Group Leadership Team members were female.

In addition to biographical information of the Group Leadership Team members, the table on the right sets forth the number of shares held by the members as at 31 December 2023, a total of 4 239 962 Nokia shares. These holdings represented approximately 0.08% of our total shares and voting rights excluding shares held by the Nokia Group. The number of shares includes shares received as compensation as well as shares acquired through other means.

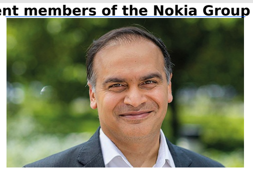
At 31 December 2023, no American Depositary Shares (ADS) were held by the Group Leadership Team members. Stock options or other equity awards that are deemed as being beneficially owned under the applicable SEC rules are not included in the table.

Name	Position	Gender	Year of birth	Nationality	On GLT since	Shares
Pekka Lundmark	President and CEO	Male	1963	Finnish	2020	1 473 060
Nishant Batra	Chief Strategy and Technology Officer	Male	1978	Indian	2021	484 473
Ricky Corker	Chief Customer Experience Officer	Male	1967	Australian	2019	437 199
Federico Guillén	President of Network Infrastructure	Male	1963	Spanish	2016	453 764
Amy Hanlon-Rodemich	Chief People Officer	Female	1972	American	2022	-
Jenni Lukander	President of Nokia Technologies	Female	1974	Finnish	2019	102 297
Esa Niinimäki	Chief Legal Officer	Male	1976	Finnish	2023	33 588
Raghav Sahgal	President of Cloud and Network Services	Male	1962	American	2020	569 659
Melissa Schoeb	Chief Corporate Affairs Officer	Female	1968	American	2021	161 367
Tommi Uitto	President of Mobile Networks	Male	1969	Finnish	2019	246 945
Marco Wirén	Chief Financial Officer	Male	1966	Finnish/Swedish	2020	277 610

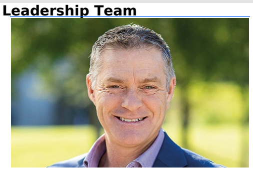
Biographical details of the current members of the Nokia Group Leadership Team



Pekka Lundmark
b. 1963



Nishant Batra
b. 1978

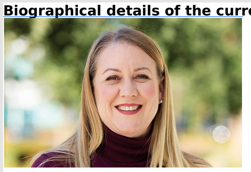


Ricky Corker
b. 1967

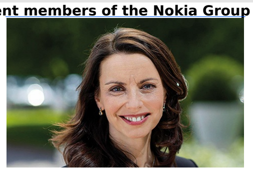
Federico Guillén
b. 1963

President and Chief Executive Officer (CEO) since 2020. Rejoined Nokia in 2020.
Master's degree in Information Systems, Department of Technical Physics, Helsinki University of Technology, Finland.
President and CEO, Fortum Corporation, 2015–2020. President and CEO, Konecranes Plc, 2005–2015 and Group Executive Vice President 2004–2005. President and CEO, Hackman Oyj, 2002–2004. Managing Partner, Startupfactory 2000–2002. Various executive positions at Nokia 1990–2000.
Commissioner, Broadband Commission for Sustainable Development. Member of the Board, Research Institute of the Finnish Economy (ETLA) and Finnish Business and Policy Forum (EVA). International Member of the Royal Swedish Academy of Engineering Sciences (IVA). Member of the Board, Finnish Athletics Federation. Member of the European Round Table for Industry. Member of The Business Council (the United States).
Chairman of the Board, Confederation of Finnish Industries 2019–2020. Member of the Board, East Office of Finnish Industries 2009–2020. Chairman of the Board, Finnish Energy 2016–2018.
Chief Strategy and Technology Officer (CSTO). Group Leadership Team member since 2021. Joined Nokia in 2021.
MBA from INSEAD. Master's degrees in Telecommunications and in Computer Science, Southern Methodist University, Dallas, the United States. Bachelor's degree in Computer Applications, Devi Ahilya University, Indore, Madhya Pradesh, India.
Executive Vice President and Chief Technology Officer, Veoneer Inc. 2018–2021. Prior to Veoneer Inc. held several senior positions at Ericsson 2006–2018 in the United States, Sweden and India.
Chair of the Board of ReOrbit Oy.
Member of the Board of Directors of Sensys Gatso Group 2020–2022.
Chief Customer Experience Officer (CCXO). Group Leadership Team member since 2019. Joined Nokia in 1993.
Bachelor in Communications and Electronic Engineering from the Royal Melbourne Institute of Technology, Australia.
Heading the global Customer Experience organization 2021–2023. President of Customer Operations, Americas, Nokia 2019–2020. Executive Vice President and President of North America, Nokia 2011–2018. Head of Asia Pacific, Nokia Siemens

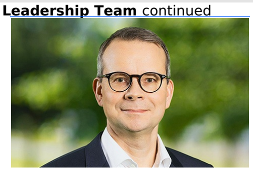
Biographical details of the current members of the Nokia Group Leadership Team continued



Amy Hanlon-Rodemich
b. 1972



Jenni Lukander
b. 1974



Esa Niinimäki
b. 1976

Raghav Sahgal
b. 1962

Chief People Officer (CPO). Group Leadership Team member since 2022. Joined Nokia in 2022.
Master of Human Resources and Organizational Development, University of San Francisco, the United States. Bachelor of Arts in English, Tufts University, Boston, the United States.
Chief People Officer, GlobalLogic, a Hitachi Group Company 2019–2022. Vice President, Human Resources, Synopsys, Inc. 2017–2019. Executive Vice President, People Success, Milestone Technologies 2016–2017. Director and Global HR Head, Yahoo 2013–2016. Various positions such as Senior HR Business Partner, Senior Manager, Director, Global Talent Development Operations, VMware 2004–2013. Employee Relations Specialist,

Technology Credit Union 2003–2004. Human Resources Manager, CAT Technology 2000–2003. Manager, Staffing Programs, Inktomi Corporation 1996–2000.
Member of the Board, Exceptional Women Awardees Foundation. Advisory Board member, Topia, Inc. Advisory Board Member, BrightPlan.
President of Nokia Technologies. Group Leadership Team member since 2019. Joined Nokia in 2007.
Master of Laws, University of Helsinki, Finland.
Senior Vice President, Head of Patent Business, Nokia 2018–2019. Vice President, Head of Patent Licensing, Nokia 2018. Vice President, Head of Litigation and Competition Law, Nokia 2016–2018. Director, Head of Regulatory and Competition Law, Nokia 2015–2016. Director, Head of Competition Law, Nokia 2011–2015. Senior Legal Counsel, Nokia 2007–2011. Visiting lawyer, Nokia 2001. Lawyer, Roschier Ltd. 1999–2007.
Chief Legal Officer (CLO) and Board Secretary. Group Leadership Team member since 2023. Joined Nokia in 2007.
Master of Laws, Fordham University, School of Law, New York, the United States. Master of Laws, University of Helsinki, Finland.
Interim Chief Legal Officer, Nokia 2022–2023. Deputy Chief Legal Officer, Vice President, Corporate Legal and Board Secretary, Nokia 2018–2023. General Counsel, Global Services, Nokia 2015–2018. Head of Corporate Legal, Nokia Solutions and Networks and Head of Finance & Labor Legal, Nokia 2013–2015. Senior Legal Counsel, Legal and IP, India, Middle East and Africa, Nokia 2012–2013.

Biographical details of the current members of the Nokia Group Leadership Team continued

Melissa Schoeb

b. 1968

Tommi Uitto

b. 1969

Marco Wirén

b. 1966

Chief Corporate Affairs Officer (CCAO). Group Leadership Team member since 2021. Joined Nokia in 2021.
Bachelor of Arts, double major in International Relations and Spanish, University of Mary Washington, Virginia, the United States. Fellowship Recipient, Four Freedoms Foundation, Rome, Italy.
Vice President, Corporate Affairs, Occidental 2017–2021. Vice President, Communications and Public Affairs, Occidental 2012–2017. Senior Director, Communications and Public Affairs, Occidental 2007–2012. Senior Vice President and Senior Partner, General Manager and other senior positions, FleishmanHillard 2002–2007. Director of Global Communications, Nortel Networks 2000–2002. Vice President, Technology, FleishmanHillard 1998–2000. Business Director, The VenCom Group Inc. 1995–1997. Consultant, London, the United Kingdom and Washington D.C., the United States, Gemini Consulting 1991–1995.
Member of the Arthur Page Society and The Seminar. Member of Mary Washington University College of Business Executive Advisory Board.
President of Mobile Networks. Group Leadership Team member since 2019. Joined Nokia in 1996.
Master's degree in industrial management, Helsinki University of Technology, Finland. Master's degree in operations management, Michigan Technological University, the United States.
Senior Vice President (VP), Global Product Sales, Mobile Networks, Nokia 2016–2018. Senior VP, Global Mobile Broadband Sales, Customer Operations, Nokia Networks 2015–2016. Senior VP, West Europe, Customer Operations, Nokia Networks 2013–2015. Head of Radio Cluster (Senior VP), Mobile Broadband, Nokia Siemens Networks (NSN) 2012–2013. Head of Global LTE Radio Access Business Line (VP) and Quality, Mobile Broadband NSN, 2011–2012. Head of Product Management, Network Systems, NSN 2010. Head of Product Management, Radio Access, NSN 2009. Head of WCDMA/HSPA and Radio Platforms Product Management, NSN 2008. Head of WCDMA/HSPA Product Line Management, NSN 2007. General Manager, Radio Controller Product Management Nokia Networks, 2005–2007. Various other positions at Nokia since 1999.
Member of the *Board of Technology Industries of Finland. Board member at F-Secure Oyj (standing for election at the 2024 AGM).*

Risk management, internal control and internal audit functions at Nokia

Risk management principles

We have a systematic and structured approach to risk management. Risk management covers strategic, operational, financial, compliance and hazard risks. The principles documented in the Nokia Enterprise Risk Management (ERM) Policy, which is approved by the Audit Committee of the Board, require risk management and its elements to be integrated into key processes:

- **ERM is an integral part of Nokia's objective setting and key decision-making**
Key risks and opportunities are primarily identified against business targets either in business operations or as an integral part of strategy and financial planning. Key risks are monitored as part of the management and business performance information flow. Our overall risk management concept is based on managing the key risks that would prevent us from meeting our objectives, rather than focusing on eliminating all risks.
- **ERM is an integral part of Nokia's corporate governance**
ERM accountability runs through the Company and is embedded into Nokia corporate governance. The Board of Directors and Group Leadership Team are committed to effective risk management as a core management capability that supports Nokia in achieving strategic, tactical and operational business objectives and in managing business performance.
- **Risk ownership follows business ownership**
Nokia ERM is aligned to the overall Nokia governance model, where Nokia's businesses are accountable for meeting approved plans and targets as agreed within Nokia. Each business or function head is an owner of the risks in their respective responsibility area and is responsible for identifying and managing key risks and capturing opportunities.
- **ERM is an area of continuous improvement**

ERM is an area of continuous improvement for Nokia. The Chief Financial Officer, who also functions as the Chief Risk Officer, provides guidance and sponsors the development of ERM practices and ERM improvement.

In addition to the principles defined in the Nokia Enterprise Risk Management Policy, other key corporate level policies reflect the implementation of specific aspects of risk management.

Cybersecurity Risk Management

Nokia, along with its partners and contracted third parties, faces cybersecurity threats like ransomware, viruses, worms and other malicious software, unauthorized modifications, or illegal activities that may cause potential security risks and other harm to Nokia, its customers or consumers and other end-users of Nokia's products and services. The dynamic nature of IT makes it challenging to fully mitigate these risks. Nokia's joint ventures and other group companies may have limited ability to oversee such threats.

The cybersecurity incidents may lead to lengthy and costly incident response, remediation of the attack or breach and legal proceedings and fines imposed on us, as well as adverse effects to our reputation and brand value. Despite ongoing investments, preventing, detecting and containing cyber-attacks remain challenging. Additionally, the cost and operational consequences of implementing further information system protection measures, especially if prescribed by national authorities, could be significant. We may not be successful in implementing such measures in due time, which could lead to business disruptions and the implementation being more expensive, time-consuming and resource intensive. The regulatory framework around responding to and disclosing such events is in flux. We may not be able to comply with the regulations that must be implemented or such compliance may negatively impact our ability to deal with the underlying event. We face a number of cybersecurity risks within our business

Description of internal control procedures in relation to the financial reporting process

Management is responsible for establishing and maintaining adequate internal control over Nokia's financial reporting. Our internal control over financial reporting is designed to provide reasonable assurance to management and the Board regarding the reliability of financial reporting and the preparation and fair presentation of published financial statements.

Management conducts a yearly assessment of Nokia's internal controls over financial reporting in accordance with the Committee of Sponsoring Organizations framework (the "COSO framework", 2013) and the Control Objectives for Information and Related Technology (COBIT) framework of internal controls. The assessment is performed based on a top-down risk assessment of our financial statements covering significant accounts, processes and locations, corporate-level controls and information systems' general controls.

As part of its assessment, management has documented:

- the corporate-level controls, which create the "tone from the top" containing the Nokia values and Code of Conduct and which provide discipline and structure to decision-making processes and ways of working. Selected items from our operational mode and governance principles are separately documented as corporate-level controls;
- the significant processes: (i) give a complete end-to-end view of all financial processes; (ii) identify key control points; (iii) identify involved organizations; (iv) ensure coverage for important accounts and financial statement assertions; and (v) enable internal control management within Nokia;
- the control activities, which consist of policies and procedures to ensure management's directives are carried out and the related documentation is stored according to our document retention practices and local statutory requirements; and
- the information systems' general controls to ensure that sufficient IT general controls, including change management, system development and computer operations, as well as access and authorizations, are in place.

Further, management has also:

- assessed the design of the controls in place aimed at mitigating the financial reporting risks;
- tested operating effectiveness of all key controls; and
- evaluated all noted deficiencies in internal controls over financial reporting in the interim and as of year end.

In 2023, Nokia has followed the procedures as described above and has reported on the progress and assessments to management and to the Audit Committee of the Board on a quarterly basis.

Description of the organization of the internal audit function

We have an internal audit function that examines and evaluates the adequacy and effectiveness of our system of internal control. Internal audit reports to the Audit Committee of the Board. The head of the internal audit function has direct access to the Audit Committee, without the involvement of management. The internal audit staffing levels and annual budget are approved by the Audit Committee. All authority of the internal audit function is derived from the Board.

The internal audit aligns to the business by business group and function.

Annually, a risk-based internal audit plan is developed with input from management, taking into account key business risks and external factors. This plan is approved by the Audit Committee. Audits are completed across business groups and functions. The results of each audit are reported to management identifying issues, financial impact, if any, and the correcting actions to be completed. Quarterly, the internal audit function communicates the progress of the internal audit plan completion, including the results of the closed audits, to the Audit Committee. Any changes to the risk environment impacting the internal audit plan are presented to the Audit Committee for review and approval on a quarterly basis.

Related party transactions

We determine and monitor related parties in accordance with the International Accounting Standards (IAS 24, Related Party Disclosures) and other applicable regulations including the applicable US securities laws. We maintain information on our related parties, as well as monitor and assess related party transactions. As a main principle, all transactions should be conducted at arm's-length and as part of the ordinary course of business. In exceptional cases where these principles would be deviated from, Nokia would set up a separate process to determine the related parties in question and to seek relevant approvals in accordance with internal guidelines and applicable regulations.

Main procedures relating to insider administration

Our insider administration is organized according to the applicable European Union and Finnish laws and regulations as well as applicable US securities laws and regulations. In addition, the Board of Directors has approved the Nokia Insider Policy, which sets out Nokia-wide rules and practices to ensure full compliance with applicable rules and that inside information is recognized and treated in an appropriate manner and with the highest integrity. The Nokia Insider Policy is applicable to all directors, executives and employees of Nokia.

Persons discharging managerial responsibilities

Nokia has identified members of the Board of Directors and the Group Leadership Team as persons discharging managerial responsibilities who, along with persons closely associated with them, are required to notify Nokia and the Finnish Financial Supervisory Authority of their transactions with Nokia's financial instruments. Nokia publishes the transaction notifications.

In addition, according to the Nokia Insider Policy, persons discharging managerial responsibilities are obligated to clear with the Head of Corporate Legal a planned transaction in Nokia's financial instruments in advance. It is also recommended that trading and other transactions in Nokia's financial instruments are carried out in times when the information available to the market is as complete as possible.

Closed window

Persons discharging managerial responsibilities are subject to a closed window period of 30 calendar days preceding the disclosure of Nokia's quarterly or annual result announcements, as well as the day of the disclosure. During the closed window period, persons discharging managerial responsibilities are prohibited from dealing in Nokia's financial instruments.

Nokia has imposed this closed window period also on separately designated financial reporting persons who are recurrently involved with the preparation of Nokia's quarterly and annual results announcements. These persons are separately notified of their status as designated financial reporting persons.

Insider registers

Nokia does not maintain a permanent insider register. Insiders are identified on a case-by-case basis for specific projects and are notified of their insider status. Persons included in a project-specific insider register are prohibited from dealing in Nokia's financial instruments until the project ends or is made public.

Supervision

Our insider administration's responsibilities include internal communications related to insider matters and trading restrictions, setting up and maintaining our insider registers and arranging related trainings, as well as organizing and overseeing compliance with the insider rules.

Violations of the Nokia Insider Policy must be reported to the Head of Corporate Legal. Nokia employees may also use channels stated in the Nokia Code of Conduct for reporting incidents involving suspected violations of the Nokia Insider Policy.

Auditor fees and services

Remuneration

This section sets out our remuneration governance, policies and how they have been implemented within Nokia. It includes our Remuneration Report where we disclose the remuneration of our Board members and the President and CEO for 2023, which will be presented to the Annual General Meeting (AGM) 2024 for an advisory vote.

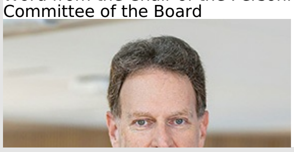
Our updated Remuneration Policy will also be presented to the AGM 2024 for an advisory vote. A summary of the updated Remuneration Policy is set out in this section and the full Policy is available on our website.

Other remuneration-related information provided alongside the Remuneration Report and the Remuneration Policy is not subject to a vote at the AGM 2024 but provides added information on the remuneration policies applied within Nokia as well as on the remuneration of the Group Leadership Team members.

We report information applicable to executive remuneration in accordance with Finnish regulatory requirements and with requirements set by the US Securities and Exchange Commission that are applicable to us.

Remuneration Report 2023

Word from the Chair of the Personnel Committee of the Board



While there have been intense negotiations between the relevant parties, the Company prioritized protecting the value of its patent portfolio over achieving certain timelines for resolution. In January and February 2024, we announced the conclusion of the patent cross-license agreements with OPPO and vivo, respectively. Under the agreements, OPPO and vivo will make royalty payments, along with catch-up payments to cover the periods of non-payment. The agreements resolve all pending patent litigation between the parties, in all jurisdictions. The Personnel Committee and the Board recognized that although both agreements were signed in early 2024 instead of 2023, the outcomes were in the best interest of the Company and our shareholders. Therefore, to fairly reflect the significant effort and achievements of Pekka Lundmark and our GLT

Introduction

This Remuneration Report of Nokia Corporation (the Report) has been approved by the Company's Board of Directors (the Board) to be presented to the Annual General Meeting 2024. The resolution of the Annual General Meeting on the Report is advisory. The Report presents the remuneration of the Board members and the President and CEO for the financial year 2023 in accordance with the Finnish Decree of the Ministry of Finance 608/2019 and the Finnish Corporate Governance Code of 2020, as well as other applicable Finnish laws and regulations. The members of the Board and the President and CEO have been remunerated in accordance with our approved Remuneration Policy during the financial year 2023. No temporary or other deviations

Remuneration of the Board of Directors

The shareholders resolve annually on director remuneration based on a proposal made by the Board of Directors on the recommendation of the Board's Corporate Governance and Nomination Committee.

The aggregate amount of remuneration paid to Board members in 2023 equaled EUR 2 503 000 of which EUR 2 370 000 consisted of annual fees and the rest of meeting fees. In accordance with the resolution by the Annual General Meeting 2023, approximately 40% of the annual fee from Board and Board Committee work was paid in Nokia shares purchased from the market on behalf of the Board members following the Annual General Meeting. The directors shall retain until the end of their directorship

Remuneration of the President and CEO

The following table shows the actual remuneration received by Pekka Lundmark in 2023 and 2022. The LTI figures relate to the vesting of the final tranche of the restricted share award granted to him on joining Nokia in respect of forfeited shares from his previous employer and the vesting of the 2020 LTI performance shares.

EUR	**2023**	**Pay mix**(1)	**2022**	**Pay mix**(1)
Salary	1 322 750	36%	1 300 000	31%
Short-term incentive(2)	1 079 695	30%	2 342 438	56%
Long-term incentive	1 240 359	34%	560 318	13%
Other compensation(3)	95 756		113 850	
Total	**3 738 560**		**4 316 606**	

(1) Pay mix reflects the proportions of base salary, STI and LTI of total remuneration, excluding other remuneration.

Long-term Incentive awards granted to the President and CEO during 2023

In 2023, Pekka Lundmark was granted the following LTI (performance share) awards.

Targets for our LTI performance shares are set in a similar context to the STI. The performance share targets are set at the start of the performance period and locked in for the life of the plan. The performance condition for the 2023 performance shares is based on two-thirds absolute TSR and one-third relative TSR against our global peer group(1) over the three-year performance period from 2023 to 2026. The targets for both metrics and the performance and vesting outcomes will be disclosed in the 2026 Remuneration Report.

Performance share awards granted during the year(2)	**Units granted**	**Grant date face value (EUR)**(3)	**Grant date**	**Vesting**
2023 LTI performance shares	635 700	2 434 731	6 July 2023	Q3 2026

(1) Global peer group consisted of 27 companies (see details under the "Global peer group" section).
(2) The maximum vesting is 200% if stretch performance targets are met. Vesting is also subject to continued employment.
(3) Grant date face value was calculated using the closing price of €3.83 on the date of grant.

Long-term Incentive awards and other equity awards vested for the President and CEO during 2023

The President and CEO’s share ownership and unvested share awards

Our share ownership policy requires that the President and CEO holds a minimum of three times his or her annual base salary in Nokia shares in order to ensure alignment with shareholder interests over the long term. Pekka Lundmark significantly exceeds this requirement with a holding of 346%, well within the five-year allotted period.

Pekka Lundmark	Units	Value(1) (EUR)
Beneficially owned shares at 31 December 2023	1 473 060	4 495 779
Unvested shares under outstanding Nokia equity plans(2)	2 910 980	8 884 310
Total	**4 384 040**	**13 380 089**

(1) The values are based on the closing price of a Nokia share of EUR 3.052 on Nasdaq Helsinki on 29 December 2023.
(2) The number of units represents the number of unvested awards as of 31 December 2023.

The President and CEO’s termination provisions 2023

Termination by	Reason	Notice	Compensation

Remuneration Policy

Nokia Corporation’s Remuneration Policy, which applies to the governing bodies of the Company, i.e. the Board of Directors and the President and CEO, was approved by shareholders at the Annual General Meeting 2020 receiving 86.37% of votes in favor. During 2023, the Board’s Personnel Committee carried out a review of the Remuneration Policy and concluded the Policy remains suitable for Nokia’s business strategy. Therefore, only minor changes are proposed to the Policy alongside some presentational changes to further align our arrangements with market practice and to provide greater transparency on our disclosure. This section sets out the updated Policy, which will be submitted to the Annual General Meeting 2024 to be adopted through an advisory vote.

The updated Policy would apply to remuneration in respect of the four-year period from 2024 to 2027, unless presented to the General Meeting at an earlier date with proposed changes.

The updated Remuneration Policy for the Board of Directors

In accordance with the Remuneration Policy, the Board’s Corporate Governance and Nomination Committee periodically reviews the remuneration for the Chair and members of the Board against companies of similar size and complexity.

The objective of the Corporate Governance and Nomination Committee is to enable Nokia to compete for top-of-class Board competence to maximize value creation for its shareholders. The Committee’s aim is that the Company has an efficient Board composed of international professionals representing a diverse and relevant mix of skills, experience, background and other personal qualities in line with the diversity principles established by the Board. Competitive Board remuneration contributes to the achievement of this target.

The main structure of the Board remuneration as outlined in the Remuneration Policy is set out in the table below.

Fees	Fees consist of annual fees and meeting fees. Approximately 40% of the annual fee is paid in Nokia shares purchased from the market on behalf of the Board members or alternatively delivered as treasury shares held by the Company. The balance is paid in cash, most of which is typically used to cover taxes arising from the paid remuneration. Meeting fees are paid in cash.
Incentives	Non-executive directors are not eligible to participate in any Nokia incentive plans and do not receive performance shares, restricted shares or any other equity-based or other form of variable compensation for their duties as members of the Board.
Pensions	Non-executive directors do not participate in any Nokia pension plans.
Share ownership requirement	Members of the Board shall normally retain until the end of their directorship such number of shares that corresponds to the number of shares they have received as Board remuneration during their first three years of service on the Board (the net amount received after deducting those shares needed to offset

The updated Remuneration Policy for the President and CEO

Remuneration element	Purpose and link to strategy	Operation including maximum opportunity	Performance conditions
Base salary	To attract and retain individuals with the requisite level of knowledge, skills and experience to lead our businesses	Base salary is normally reviewed annually taking into consideration a variety of factors, including but not limited to, performance of the Company and the individual, remuneration of our external peer group, changes in individual responsibilities and employee salary increases.	Whilst there are no performance targets attached to the payment of base salary, performance is considered as context in the annual salary review.
Pension	To provide retirement benefit aligned with local country practice	Pension arrangements reflect the relevant market practice and may evolve year on year. The President and CEO may participate in the applicable pension programs available to other executives in the country of employment. The current President and CEO participates in the Finnish statutory Employee’s Pension Act (TyEL); there is no supplementary pension plan. The retirement age is the statutory retirement age in Finland.	N/A
Benefits	To provide a competitive level of benefits and to support recruitment and retention	Benefits will be provided in line with local market practice in the country of employment and may evolve year on year. Benefits may include, for example, a company car (or cash equivalent), risk benefits (for example life and disability insurance) and employer contributions to insurance plans (for example medical insurance). Additional benefits and allowances may be offered in certain circumstances such as relocation support, expatriate allowances, and temporary living and transportation expenses aligned with Nokia’s mobility policy.	N/A
Short-term incentive (STI)	To incentivize and reward performance against delivery of the annual business plan	STI is based on performance against one-year financial and non-financial targets and normally paid in cash. Minimum payout is 0% of base salary. Target opportunity is 125% of base salary. Maximum opportunity is 281.25% of base salary. The Company Clawback Policies apply.	Performance measures, weightings and targets for the selected measures are set at the start of the year annually by the Board of Directors to ensure they continue to support Nokia’s short-term business strategy. These measures can vary from year to year to reflect business priorities and may include a balance of financial, key operational and non-financial measures. Although the performance measures and weighting may differ year on year reflecting the business priorities, in any given year, a minimum of 60% of measures will be based on financial criteria. Performance metrics and weightings are disclosed retrospectively in the annual Remuneration Report.
Long-term incentive (LTI) – performance share award	To reward for delivery of sustainable long-term performance, align the President and CEO’s interests with those of shareholders and aid retention	Long-term incentive awards may be made annually in shares, vesting normally after three years dependent on the achievement of stretching performance conditions measured over a three-year period. Target award level is 200% of base salary at the date of grant, with maximum vesting of 400% of base salary. The Company Clawback Policies apply.	Performance measures, weightings and targets for the selected measures are set by the Board of Directors to ensure they continue to support Nokia’s long-term business strategy and financial success. Targets are set in the context of Nokia’s long-term plans and analyst forecasts, ensuring that they are considered both achievable and sufficiently stretching. The Committee may choose different measures and weightings each year based on the business plan and these will consist of at least 60% financial measures and/or share price-related measures. Performance metrics and weightings are disclosed retrospectively in the annual Remuneration Report.

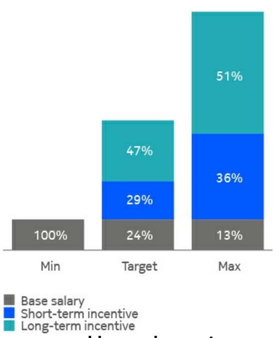
Remuneration element	Purpose and link to strategy	Operation including maximum opportunity	Performance conditions
Enhanced LTI (eLTI) – co-investment arrangement	To further align the President and CEO's interests with Nokia's long-term success and shareholder interests	To further align the President and CEO's interests with Nokia's long-term success and shareholder interests eLTI is only granted in exceptional circumstances. The President and CEO may be invited, at the discretion of the Board, to purchase investment shares of up to 200% of base salary, and in return, receive two matching shares for every one investment share purchased. The matching shares are delivered in the form of performance shares, typically subject to the same performance conditions as for the LTI performance share award, with a three-year performance and vesting period. The minimum vesting of the matching shares is 0% of base salary and maximum vesting is two times grant level. The Company Clawback Policies apply.	The performance metrics, targets and weightings for the matching shares are typically the same as those for LTI performance shares granted in the same year.
Shareholding requirement	To align the President and CEO's interests with shareholder interests and ensure any decisions made are in the long-term interest of the Company	The President and CEO is required to build and maintain a shareholding equivalent to 300% of base salary, to be achieved normally within five years of appointment.	N/A

Pay mix and remuneration scenarios for the President and CEO

The chart below illustrates how the proportion of the President and CEO's remuneration package varies at the minimum, target and maximum levels of performance. A significant proportion of remuneration is linked to performance, especially at stretch performance levels. Actual pay mix is influenced by the extent to which the performance targets set for the STI and LTI are achieved and may vary from the scenarios below.

The long-term incentive vesting outcomes in the chart below ignore share price movement from grant to vest. The eLTI is not included in this analysis as it is not an annual award and is only granted in exceptional circumstances. The vesting outcome of the matching performance shares under the eLTI would be dependent, besides the performance, on the value of the investment, which could range from 0% to 200% of base salary for the President and CEO. The minimum and maximum vesting levels for the matching performance shares are provided in the above summary table of the remuneration elements.

President and CEO pay mix scenarios



Share ownership requirement

Nokia believes that it is desirable for its executives to own shares in Nokia to align their interests with those of shareholders and to ensure that their decisions are in the long-term interest of the Company. The President and CEO is required to own three times his or her annual base salary in Nokia shares and is given a period of five years from appointment to achieve the required level of share ownership.

Clawback Policies

The Company Clawback Policies apply to the President and CEO's incentive plans. The Executive Clawback Policy is applied in the case of any erroneously awarded remuneration due to restatement in the Company's financial statements with a three-year look back period, resulting in the recoupment of excess amounts previously paid based on numbers which have since been materially restated.

Additionally, the Board of Directors may, in its sole discretion, apply the Nokia Incentive Compensation Clawback Policy in circumstances such as reputational damage, gross misconduct and willful breach of internal control procedure.

Remuneration on recruitment

Our policy on recruitment is to offer a remuneration package that is sufficient to attract, retain and motivate the individual with the right skills for the required role.

On occasion, we may offer buy-out awards to compensate for

Work of the Personnel Committee

The Personnel Committee convened five times during 2023 with a general theme for each meeting.

Remuneration governance

We manage our remuneration through clearly defined processes, with well-defined governance principles, ensuring that no individual is involved in the decision-making related to their own remuneration, and that there is appropriate oversight of any remuneration decision. Remuneration of the Board is annually presented to shareholders for approval at the Annual General Meeting.

The Board submits its proposal to the Annual General Meeting on the recommendation of the Board's Corporate Governance and Nomination Committee, which actively considers and evaluates the appropriate level and structure of directors' remuneration. Shareholders also authorize the Board to resolve to issue shares, for example to settle Nokia's equity-

Remuneration of the Nokia Group Leadership Team in 2023

The remuneration of the members of the GLT (excluding the President and CEO) consists of base salary, other benefits, and short- and long-term incentives. Short-term incentive plans are based on rewarding the delivery of business performance utilizing certain, or all, of the following metrics as appropriate to the member's role: Economic Profit, diversity, carbon emission reduction and defined strategic objectives.

Executives in the GLT are subject to the same remuneration policy framework as the President and CEO. This includes being subject to the Clawback Policies and shareholding requirements. The shareholding requirement for members of the GLT is two times their annual base salary, built within a period of five years of their appointment.

At the end of 2023, the Group Leadership Team consisted of 11 persons split between Finland, other European count ries, Singapore and the United States. For information regarding the current Group Leadership Team composition, refer to the Corporate Governance Statement.

Name	Position in 2023	Appointment date
Pekka Lundmark	President and CEO	1 August 2020
Nishant Batra	Chief Strategy and Technology Officer	18 January 2021
Ricky Corker	Chief Customer Experience Officer	1 January 2019
Federico Guillén	President of Network Infrastructure	8 January 2016
Amy Hanlon-Rodemich	Chief People Officer	24 October 2022
Jenni Lukander	President of Nokia Technologies	1 August 2019
Esa Niinimäki	Chief Legal Officer	25 January 2023
Raghav Sahgal	President of Cloud and Network Services	1 June 2020
Melissa Schoeb	Chief Corporate Affairs Officer	12 April 2021
Tommi Uitto	President of Mobile Networks	31 January 2019
Marco Wirén	Chief Financial Officer	1 September 2020

Remuneration of the Group Leadership Team members in 2023

Remuneration of the Group Leadership Team (excluding the President and CEO) in 2022 and 2023, in the aggregate, was as follows:

EURm(1)	2023	2022
Salary, short-term incentives and other compensation(2)	10.8	13.6
Long-term incentives(3)	2.5	7.0
Total	**13.3**	**20.6**

(1)The values represent each member's time on the Group Leadership Team.
(2)Short-term incentives represent amounts earned in respect of 2023 performance. Other compensation includes mobility-related payments, local benefits and p ension costs.
(3)The amounts represent the equity awards that vested in 2023 and 2022.

The members of the Group Leadership Team (excluding the President and CEO) were awarded the following equity a wards under the Nokia equity program in 2023:

Award	Units awarded(1)	Grant date fair value (EUR)	Grant date	Vesting
Performance share award(2)	1 858 500	7 118 055	6 July 2023	Q3 2026
Restricted share award(3)	1 454 000	4 376 540	15 December 2023	Q4 2024, Q4 2025

(1)Includes units awarded to persons who were Group Leadership Team members during 2023.
(2)The 2023 performance shares have a three-year performance period based on absolute total shareholder return. The maximum payout is 200% subject to max imum performance against the performance criteria. Vesting is subject to continued employment.
(3)Vesting of each tranche of the restricted share awards is conditional on continued employment.

Unvested equity awards held by the Group Leadership Team, including the President and CEO

The following table sets forth the potential aggregate ownership interest through the holding of equity-based long-term incentives of the Group Leadership Team in office, including the President and CEO, at 31 December 2023:

	Shares receivable through performance shares at grant	Shares receivable through performance shares at maximum(4)	Shares receivable through restricted shares
Number of equity awards held by the Group Leadership Team(1)	9 556 958	19 113 916	1 454 000
% of the outstanding shares(2)	0.17%	0.35%	0.03%
% of the total outstanding equity incentives (per instrument)(3)	22.19%	23.26%	1.55%

(1)Includes the 11 members of the Group Leadership Team in office at 31 December 2023.
(2)The percentages are calculated in relation to the outstanding number of shares and total voting rights of Nokia at 31 December 2023, excluding shares held by the Nokia Group. No member of the Group Leadership Team owns more than 1% of the outstanding Nokia shares.
(3)The percentages are calculated in relation to the total outstanding equity incentives per instrument.
(4)At maximum performance, under the performance share plans outstanding at 31 December 2023, the payout would be 200% and the table reflects this potential maximum payout.

Employee Share Purchase Plan

All eligible Nokia employees, including the President and CEO and our GLT members can participate in the Employee Share Purchase Plan, by making contributions from their monthly net salaries (up to a cap) to purchase Nokia shares at market value. Participants will receive one matching share for every two purchased shares they still hold at the end of the applicable annual plan cycle. Until the matching shares are delivered, the participants have no shareholder rights, such as voting or dividend rights associated with the matching shares.

Pay for performance

Core to our remuneration philosophy is a desire to pay for performance.

Each year we review overall total shareholder return compared with LTI vesting, mapping the performance of the plans against the total shareholder return curve.

Share price and total shareholder return vs long-term incentive performance

* 2021 LTI's performance period ended in Jan 2024. The vesting outcome of this award will be reported in the 2024 Remuneration Report.
** 2022 and 2023 LTIs' performance periods not yet completed.

Looking at the performance of our long-term incentive plans against total shareholder return, there is a reasonable alignment with the performance of the plans declining as total shareholder return declines.

The Board continues to actively monitor the performance of our long-term incentive plans to ensure that they deliver value for shareholders.

Global peer group

The global peer group used in our remuneration benchmarking and relative TSR performance assessment consists of 27 companies.

ABB	IBM
Adobe	Infineon Technologies
Airbus	Juniper Networks
ASML	Kone
Atos	Motorola Solutions
BAE Systems	NXP Semiconductors
Capgemini	Oracle
Ciena	Philips
Cisco Systems	SAP
Corning	Siemens Healthineers
Dell Technologies	VMware
Ericsson	Vodafone Group
Hewlett Packard Enterprise	Wärtsilä
HP	

Selected financial data

This section includes selected financial and other measures for the Nokia Group as of and for each of the years in the three-year period ended 31 December 2023. The information has been derived from, and should be read in conjunction with, our audited consolidated financial statements prepared in accordance with IFRS. The consolidated financial statements as of 31 December 2023 and 2022, and for the years ended 31 December 2023, 2022 and 2021 are included in this report.

EURm (except for percentage and personnel data)	2023	2022	2021
From the consolidated income statement			
Net sales	22 258	24 911	22 202
Operating profit	1 688	2 318	2 158
% of net sales	7.6%	9.3%	9.7%
Profit before tax	1 499	2 184	1 926
Profit from continuing operations	674	4 210	1 654
Profit/(loss) from discontinued operations	5	49	(9)
Profit for the year	679	4 259	1 645
From the consolidated statement of financial position			
Non-current assets	21 694	22 677	20 452
Current assets	18 087	20 266	19 597
Assets held for sale	79	—	—
Total assets	39 860	42 943	40 049
Total shareholders' equity	20 537	21 333	17 360
Non-controlling interests	91	93	102
Total equity	20 628	21 426	17 462
Interest-bearing liabilities(1)	4 191	4 477	4 653
Lease liabilities(1)	997	1 042	1 009
Provisions(1)	1 262	1 435	1 569
Other liabilities(1)	12 782	14 563	15 356
Total shareholders' equity and liabilities	39 860	42 943	40 049
Other information			
Research and development expenses	(4 327)	(4 550)	(4 214)
% of net sales	(19.4)%	(18.3)%	(19.0)%
Capital expenditure(2)	(652)	(601)	(560)
% of net sales	(2.9)%	(2.4)%	(2.5)%
Personnel expenses	(7 470)	(7 903)	(7 541)
Average number of employees	86 689	86 896	87 927
Order backlog, EUR billion	22.0	19.5	20.3

Operating and financial review

The financial information included in this "Operating and financial review" section as of and for the years ended 31 December 2023 and 2022 has been derived from our audited consolidated financial statements included in this report. The financial information should be read in conjunction with, and is qualified in its entirety by reference to, our audited consolidated financial statements. For a discussion of the year ended 31 December 2022 compared to the year ended 31 December 2021, please refer to the "Operating and financial review" section of our Annual Report on Form 20-F for the year ended 31 December 2022.

Results of operations

This "Results of operations" section discusses the results of our continuing operations.

Cost savings program

On 19 October 2023, Nokia announced actions being taken across business groups to address the increasingly challenging market environment that the Company faces. The Company will reduce its cost base and increase operational efficiency while protecting its R&D capacity and commitment to technology leadership.

Nokia targets to lower its cost base on a gross basis (i.e. before inflation) by between EUR 800 million and EUR 1 200 million by the end of 2026 compared to 2023, assuming on-target variable pay in both periods. This represents a 10-15% reduction in personnel expenses. The program is expected to lead to a 72 000–77 000 employee organization compared to the 86 000 employees Nokia had when the program was announced.

The program is expected to deliver savings on a net basis but the magnitude will depend on inflation. The cost savings are expected to primarily be achieved in Mobile Networks, Cloud and Network Services and Nokia's corporate functions. One-time restructuring charges and cash outflows of the program are expected to be similar to the annual cost savings achieved.

The current plan envisages achieving gross cost savings of EUR 1 000 million within the 2024–2026 program although this remains subject to change depending on the evolution of end market demand. This includes the expected gross cost savings along with the associated restructuring charges and cash outflows for the program. Nokia expects approximately 70% of the savings to be achieved within operating expenses and 30% within cost of sales. By business group, approximately 60% of the savings are expected to be achieved within Mobile Networks, 30% within Cloud and Network Services and the remaining 10% between Network Infrastructure and corporate center.

The prior cost savings program from 2021 to 2023 is now essentially completed.

Conclusion of smartphone patent license renewal cycle

On 8 February 2024, Nokia announced it had signed its last remaining major smartphone patent license agreement and concluded its smartphone patent license renewal cycle which began in 2021. Nokia Technologies will now enter a period of stability with no major smartphone license agreements expiring for a number of years. In addition to license agreements signed with Apple and Samsung in 2023, and Huawei in December 2022, Nokia Technologies signed agreements with Honor, OPPO and vivo, among others at the beginning of 2024.

As a result, at the conclusion of the smartphone patent license renewal cycle, Nokia Technologies currently has an annual net sales run-rate (contracted recurring net sales) of approximately EUR 1.3 billion, excluding catch-up net sales. In addition to the remaining addressable smartphone market, it will continue to focus on opportunities to grow the annual net sales run-rate through patent licensing in areas such as automotive, consumer electronics, IoT and multimedia, to reach a run-rate of EUR 1.4-1.5 billion in the mid term.

For the year ended 31 December 2023 compared to the year ended 31 December 2022

The following table sets forth the results of Nokia's continuing operations and the percentage of net sales for the years indicated.

	2023		2022		
	EURm	% of net sales	EURm	% of net sales	Year-on-year change %
Net sales	**22 258**	**100.0**	**24 911**	**100.0**	**(11)**
Cost of sales	(13 571)	(61.0)	(14 689)	(59.0)	(8)
Gross profit	**8 687**	**39.0**	**10 222**	**41.0**	**(15)**
Research and development expenses	(4 327)	(19.4)	(4 550)	(18.3)	(5)
Selling, general and administrative expenses	(2 929)	(13.2)	(3 013)	(12.1)	(3)
Other operating income and expenses	257	1.2	(341)	(1.4)	(175)
Operating profit	**1 688**	**7.6**	**2 318**	**9.3**	**(27)**
Share of results of associated companies and joint ventures	(39)	(0.2)	(26)	(0.1)	50
Financial income and expenses	(150)	(0.7)	(108)	(0.4)	39
Profit before tax	**1 499**	**6.7**	**2 184**	**8.8**	**(31)**
Income tax (expense)/benefit	(825)	(3.7)	2 026	8.1	(141)
Profit for the year from continuing operations	**674**	**3.0**	**4 210**	**16.9**	**(84)**
Attributable to:					
Equity holders of the parent	660	3.0	4 201	16.9	(84)
Non-controlling interests	14	0.1	9	—	56

Net sales

Net sales in 2023 were EUR 22 258 million, a decrease of EUR 2 653 million, or 11%, compared to EUR 24 911 million in 2022. In 2023, our industry was impacted by a meaningful shift in customer behavior driven by the macroeconomic environment, high interest rates and customer inventory digestion. In addition to a negative impact from foreign exchange rate fluctuations, performance was driven by declines across all four business groups, with particular weakness in Network Infrastructure, Mobile Networks and Nokia Technologies. Net sales declined 3% due to foreign exchange rate fluctuations in 2023.

The following table sets forth distribution of net sales by region for the years indicated.(1)

EURm	2023	2022	Year-on-year change %
Asia Pacific	2 291	2 648	(13)
Europe(1)	5 873	6 662	(12)
Greater China	1 303	1 581	(18)
India	2 842	1 290	120
Latin America	1 046	1 223	(14)
Middle East & Africa	2 050	1 969	4
North America	5 733	8 388	(32)
Submarine Networks	1 120	1 150	(3)
Total	**22 258**	**24 911**	**(11)**

(1)All Nokia Technologies IPR and licensing net sales are allocated to Finland.

The following table sets forth distribution of net sales by customer type for the years indicated.

EURm	2023	2022	Year-on-year change %
Communications service providers	17 652	19 921	(11)
Enterprise	2 282	1 997	14
Licensees	1 085	1 595	(32)
Other(1)	1 239	1 398	(11)

Operating expenses

Our research and development expenses in 2023 were EUR 4 327 million, a decrease of EUR 223 million, or 5%, compared to EUR 4 550 million in 2022. Research and development

expenses represented 19.4% of our net sales in 2023 compared to 18.3% in 2022. While research and development expenses declined in 2023, they declined at a slower rate than net sales, reflecting the impact of inflation in addition to our commitment to build and maintain technology leadership across our portfolio. Research and development expenses were also positively impacted by foreign exchange rate fluctuations. By business, the decrease was primarily related to both Mobile Networks and Network Infrastructure. Research and development expenses in 2023 also reflected higher restructuring and associated charges, which amounted to EUR 61 million in 2023, compared to EUR 37 million in 2022. In 2023, variable pay accruals within research and development expenses were lower, compared to 2022.
Our selling, general and administrative expenses in 2023 were EUR 2 929 million, a decrease of EUR 84 million compared to EUR 3 013 million in 2022. Selling, general and administrative expenses represented 13.2% of our net sales in 2023 compared to 12.1% in 2022. The modest decrease in selling, general and administrative expenses was driven by the impact of inflation, which was broad-based across businesses and reflected higher salary expenses, but was somewhat offset by cost savings actions and the positive impact from foreign exchange rate fluctuations. Additionally, the lower selling, general and administrative expenses in 2023 reflected higher restructuring and associated charges, partially offset by lower amortization of acquired intangible assets. 2023 included restructuring and associated charges of EUR 138 million, compared to EUR 52 million in 2022. In 2023, selling, general and administrative expenses included amortization of acquired intangible assets of EUR 301 million, compared to EUR 356 million in 2022. In 2023, variable pay accruals within selling, general and administrative expenses were lower, compared to 2022.
Other operating income and expenses in 2023 was a net income of EUR 257 million, an improvement of EUR 598 million, compared to a net expense of EUR 341 million in 2022. The improvement in other operating income and expenses was primarily related to the positive impact from foreign exchange hedging, a net positive fluctuation related to provisions associated with a country exit, the sale of digital assets, a net positive fluctuation in the amount of loss allowances on trade receivables, partly offset by a net negative impact from Nokia's venture fund investments. The impact of hedging was positive EUR 80 million in 2023, compared to a negative impact of EUR 107 million in 2022. In 2022, a provision associated with a country exit amounting to EUR 98 million was booked, of which EUR 49 million was reversed in 2023. Additionally, the net loss related to Nokia's venture fund investments in 2023 was approximately EUR 70 million, compared to a net benefit of approximately EUR 20 million in 2022.

Operating profit

Our operating profit in 2023 was EUR 1 688 million, a decrease of EUR 630 million, compared to an operating profit of EUR 2 318 million in 2022. The decrease in operating profit was due to lower gross profit, partially offset by a net positive fluctuation in other operating income and expenses, lower research and development expenses and lower selling, general and administrative expenses. Our operating margin in 2023 was 7.6%, compared to 9.3% in 2022.

Financial income and expenses

Financial income and expenses were a net expense of EUR 150 million in 2023, an increase of EUR 42 million, compared to a net expense of EUR 108 million in 2022. The net negative fluctuation in financial income and expenses mainly resulted from a EUR 207 million negative fluctuation in net foreign exchange gains and losses and EUR 136 million of higher interest expenses which were partly offset by EUR 233 million of higher interest income and a EUR 61 million impairment in 2022 related to loans extended to a customer. The higher interest income was primarily driven by EUR 130 million higher interest income on financial investments and EUR 95 million higher net interest income on deferred pension plans.

Profit before tax

Our profit before tax in 2023 was EUR 1 499 million, a decrease of EUR 685 million compared to EUR 2 184 million in 2022.

Income tax

Income taxes were a net expense of EUR 825 million in 2023, a net negative fluctuation of EUR 2 851 million compared to a net benefit of EUR 2 026 million in 2022. The fluctuation in net income taxes was primarily attributable to the recognition of Finnish deferred tax assets of EUR 2.5 billion that positively impacted 2022, as well as a non-recurring tax expense of EUR 392 million related to an internal operating model change that led to a remeasurement of a deferred tax asset that negatively impacted 2023. For more details on these items, please refer to Note 2.5. Income taxes in our consolidated financial statements.

Profit attributable to equity holders of the parent and earnings per share

The profit attributable to equity holders of the parent in 2023 was EUR 660 million, a decrease of EUR 3 541 million, compared to a profit of EUR 4 201 million in 2022. The change in profit attributable to equity holders of the parent was primarily due to the net negative fluctuation in income taxes, the lower operating profit and, to a lesser extent, a net negative fluctuation in financial income and expenses.
Our EPS from continuing operations in 2023 was EUR 0.12 (basic) and EUR 0.12 (diluted) compared to EUR 0.75 (basic) and EUR 0.74 (diluted) in 2022.

Results of segments

In 2023, we had four operating and reportable segments for financial reporting purposes: (1) Network Infrastructure, (2) Mobile Networks, (3) Cloud and Network Services and (4) Nokia Technologies. We also present segment-level information for Group Common and Other. The amounts presented in this "Results of segments" section for each reportable segment and Group Common and Other represent the amounts reported to the management for the purpose of assessing performance and making decisions about resource allocation. Certain costs and revenue adjustments are not allocated to the segments for this purpose. For more information on our operational and reporting structure as well as the reconciliation of reportable segment measures to those of the Nokia Group, refer to Note 2.2. Segment information, in the consolidated financial statements.

Network Infrastructure

For the year ended 31 December 2023 compared to the year ended 31 December 2022

The following table sets forth the segment operating results and the percentage of net sales for the years indicated.

	2023		2022		
	EURm	% of net sales	EURm	% of net sales	Year-on-year change %
Net sales(1)	**8 037**	**100.0**	**9 047**	**100.0**	**(11)**
Cost of sales	(4 987)	(62.1)	(5 739)	(63.4)	(13)
Gross profit	**3 050**	**37.9**	**3 308**	**36.6**	**(8)**
Research and development expenses	(1 259)	(15.7)	(1 307)	(14.4)	(4)
Selling, general and administrative expenses	(818)	(10.2)	(833)	(9.2)	(2)
Other operating income and expenses	81	1.0	(66)	(0.7)	(223)
Operating profit	**1 054**	**13.1**	**1 102**	**12.2**	**(4)**

(1)In 2023, net sales include IP Networks net sales of EUR 2 606 million, Optical Networks net sales of EUR 1 942 million, Fixed Networks net sales of EUR 2 369 million and Submarine Networks net sales of EUR 1 120 million. In 2022, net sales include IP Networks net sales of EUR 3 063 million, Optical Networks net sales of EUR 1 891 million, Fixed Networks net sales of EUR 2 943 million and Submarine Networks net sales of EUR 1 150 million.

Net sales

Network Infrastructure net sales in 2023 were EUR 8 037 million, a decrease of EUR 1 010 million, or 11%, compared to EUR 9 047 million in 2022. While net sales in Network Infrastructure were negatively impacted by foreign exchange rate fluctuations in 2023, the decrease reflected declines across all businesses, with the exception of Optical Networks. Net sales declined 2% due to foreign exchange rate fluctuations in 2023.
IP Networks net sales were EUR 2 606 million in 2023, a decrease of EUR 457 million, or 15%, compared to EUR 3 063 million in 2022. Net sales in IP Networks decreased in 2023, with particular weakness in North America as CSP customers evaluated their spending through most of the year, with smaller variations across other regions.
Optical Networks net sales were EUR 1 942 million in 2023, an increase of EUR 51 million, or 3%, compared to EUR 1 891 million in 2022. The increase in Optical Networks net sales primarily reflected the strong momentum of and customer engagement with our PSE-V solutions. From a regional perspective, the net sales increase was primarily driven by India, with smaller variations in other regions.
Fixed Networks net sales were EUR 2 369 million in 2023, a decrease of EUR 574 million, or 20%, compared to EUR 2 943 million in 2022. The decline in Fixed Networks net sales was primarily driven by weakness in North America with a slowdown in fixed wireless access, as well as in fiber where customers evaluated their spending and digested inventories.
Submarine Networks net sales were EUR 1 120 million in 2023, a decrease of EUR 30 million, or 3%, compared to EUR 1 150 million in 2022. The slight decrease in Submarine Networks net sales mainly reflected project timing, while the business continues to execute on its strong order backlog.

Gross profit

Network Infrastructure gross profit in 2023 was EUR 3 050 million, a decrease of EUR 258 million, or 8%, compared to EUR 3 308 million in 2022. Network Infrastructure gross margin in 2023 was 37.9%, compared to 36.6% in 2022. Network Infrastructure gross profit declined while gross margin improved, primarily reflecting favorable mix shift despite the decline in net sales. In 2023, variable pay accruals within Network Infrastructure cost of sales were lower, compared to 2022.

Operating expenses

Network Infrastructure research and development expenses were EUR 1 259 million in 2023, a decrease of EUR 48 million, or 4%, compared to EUR 1 307 million in 2022. The decrease in research and development expenses largely reflected lower variable pay accruals and foreign exchange rate fluctuations, which more than offset the impact of inflation.
Network Infrastructure selling, general and administrative expenses were EUR 818 million in 2023, a decrease of EUR 15 million, or 2%, compared to EUR 833 million in 2022. The decrease in Network Infrastructure selling, general and administrative expenses largely primarily reflected lower variable pay accruals and foreign exchange rate fluctuations, which more than offset the

Mobile Networks

For the year ended 31 December 2023 compared to the year ended 31 December 2022

The following table sets forth the segment operating results and the percentage of net sales for the years indicated.

	2023		2022		
	EURm	% of net sales	EURm	% of net sales	Year-on-year change %
Net sales	**9 797**	**100.0**	**10 671**	**100.0**	**(8)**
Cost of sales	(6 364)	(65.0)	(6 575)	(61.6)	(3)
Gross profit	**3 433**	**35.0**	**4 096**	**38.4**	**(16)**
Research and development expenses	(2 010)	(20.5)	(2 234)	(20.9)	(10)
Selling, general and administrative expenses	(822)	(8.4)	(865)	(8.1)	(5)
Other operating income and expenses	122	1.2	(57)	(0.5)	(315)
Operating profit	**723**	**7.4**	**940**	**8.8**	**(23)**

Net sales

Mobile Networks net sales in 2023 were EUR 9 797 million, a decrease of EUR 874 million, or 8%, compared to EUR 10 671 million in 2022. While net sales in Mobile Networks were negatively impacted by foreign exchange rate fluctuations in 2023, the decline mainly reflected weakness in North America which was somewhat offset by strong growth in India. Net sales in North America declined sharply, as customers evaluated their spending amidst macroeconomic uncertainty and depleted their inventories through the year. Strong growth in India was driven by the continuation of 5G deployments and market share expansion in the region. Net sales declined 3% due to foreign exchange rate fluctuations in 2023.

Gross profit

Mobile Networks gross profit in 2023 was EUR 3 433 million, a decrease of EUR 663 million, or 16%, compared to EUR 4 096 million in 2022. Mobile Networks gross margin in 2023 was 35.0%, compared to 38.4% in 2022. The decrease in Mobile Networks gross profit and gross margin largely reflected unfavorable regional mix. In 2023, variable pay accruals within Mobile Networks cost of sales were lower, compared to 2022.

Operating expenses

Mobile Networks research and development expenses were EUR 2 010 million in 2023, a decrease of EUR 224 million, or 10% compared to EUR 2 234 million in 2022. The lower research and development expenses mainly reflected lower variable pay accruals, continued cost control and the positive impact of foreign exchange rate fluctuations, which largely offset the impact of inflation.

Mobile Networks selling, general and administrative expenses were EUR 822 million in 2023, a decrease of EUR 43 million, or 5%, compared to EUR 865 million in 2022. The decrease in Mobile Networks selling, general and administrative expenses mainly reflected lower variable pay accruals, continued cost control and the positive impact of foreign exchange rate fluctuations, which more than offset the impact of inflation.

Mobile Networks other operating income and expenses was an income of EUR 122 million in 2023, a change of EUR 179 million compared to an expense of EUR 57 million in 2022. The change in other operating income and expenses was primarily due to the positive impact from foreign exchange hedging and the sale of digital assets, as well as a net positive fluctuation in the amount of loss allowances on trade receivables.

Operating profit

Mobile Networks operating profit was EUR 723 million in 2023, a decrease of EUR 217 million, compared to EUR 940 million in 2022. Mobile Networks operating margin was 7.4% in 2023 compared to 8.8% in 2022.

Cloud and Network Services

For the year ended 31 December 2023 compared to the year ended 31 December 2022

The following table sets forth the segment operating results and the percentage of net sales for the years indicated.

	2023		2022		
	EURm	% of net sales	EURm	% of net sales	Year-on-year change %
Net sales	**3 220**	**100.0**	**3 351**	**100.0**	**(4)**
Cost of sales	(1 944)	(60.4)	(2 011)	(60.0)	(3)
Gross profit	**1 276**	**39.6**	**1 340**	**40.0**	**(5)**
Research and development expenses	(577)	(17.9)	(577)	(17.2)	—
Selling, general and administrative expenses	(494)	(15.3)	(544)	(16.2)	(9)
Other operating income and expenses	50	1.6	(42)	(1.3)	(219)
Operating profit	**255**	**7.9**	**177**	**5.3**	**44**

Net sales

Cloud and Network Services net sales in 2023 were EUR 3 220 million, a decrease of EUR 131 million, or 4%, compared to EUR 3 351 million in 2022. In addition to the negative impact from foreign exchange fluctuations, net sales in Cloud and Network Services reflected growth in Enterprise Solutions and Core Networks which was more than offset by declines in Cloud and Cognitive Services and Business Applications. Net sales declined 3% due to foreign exchange rate fluctuations in 2023.

Gross profit

Cloud and Network Services gross profit in 2023 was EUR 1 276 million, a decrease of EUR 64 million, or 5%, compared to EUR 1 340 million in 2022. Cloud and Network Services gross margin in 2023 was 39.6%, compared to 40.0% in 2022. The decrease in Cloud and Network Services gross profit reflected the mix shift from software sales towards lower margin hardware sales in the first half of the year, somewhat offset by lower variable pay accruals in 2023 compared to 2022.

Operating expenses

Cloud and Network Services research and development expenses were EUR 577 million in 2023, flat compared to EUR 577 million in 2022. The flat research and development expenses largely reflected lower variable pay accruals in 2023 compared to 2022, the positive impact of foreign exchange rate fluctuations and continued discipline on cost control which offset the impact of inflation.

Cloud and Network Services selling, general and administrative expenses were EUR 494 million in 2023, a decrease of EUR 50 million, or 9%, compared to EUR 544 million in 2022. The decrease in Cloud and Network Services selling, general and administrative expenses largely reflected lower variable pay accruals in 2023 compared to 2022, the positive impact of foreign exchange rate fluctuations and continued discipline on cost control which offset the impact of inflation.

Cloud and Network Services other operating income and expenses was an income of EUR 50 million in 2023, a change of EUR 92 million compared to an expense of EUR 42 million in 2022. The change in other operating income and expenses was primarily due to the positive impact from foreign exchange hedging and the sale of digital assets.

Operating profit

Cloud and Network Services operating profit was EUR 255 million in 2023, an increase of EUR 78 million, compared to EUR 177 million in 2022. Cloud and Network Services operating margin in 2023 was 7.9% compared to 5.3% in 2022.

Nokia Technologies

For the year ended 31 December 2023 compared to the year ended 31 December 2022

The following table sets forth the segment operating results and the percentage of net sales for the years indicated.

	2023		2022		
	EURm	% of net sales	EURm	% of net sales	Year-on-year change %
Net sales	**1 085**	**100.0**	**1 595**	**100.0**	**(32)**
Cost of sales	—	—	(5)	(0.3)	(100)
Gross profit	**1 085**	**100.0**	**1 590**	**99.7**	**(32)**
Research and development expenses	(224)	(20.6)	(214)	(13.4)	5
Selling, general and administrative expenses	(140)	(12.9)	(136)	(8.5)	3
Other operating income and expenses	13	1.2	(32)	(2.0)	(141)
Operating profit	**734**	**67.6**	**1 208**	**75.7**	**(39)**

Net sales

Nokia Technologies net sales in 2023 were EUR 1 085 million, a decrease of EUR 510 million, or 32%, compared to EUR 1 595 million in 2022. The decrease in Nokia Technologies net sales was primarily due to a significant one-off that benefited 2022, which related to an option exercised within a long-term license, as well as catch-up net sales in 2022 related to new deals signed in the same year. Net sales in 2023 were also impacted by lower net sales from a smartphone vendor whose market share has meaningfully declined and the lower net sales from a license that expired at the end of the third quarter 2023, which were somewhat offset by catch-up net sales related to deals signed in the second quarter of 2023.

Gross profit

Nokia Technologies gross profit in 2023 was EUR 1 085 million, a decrease of EUR 505 million, or 32%, compared to EUR 1 590 million in 2022. The lower gross profit in Nokia Technologies was due to lower net sales.

Operating expenses

Nokia Technologies research and development expenses in 2023 were EUR 224 million, an increase of EUR 10 million, or 5%, compared to EUR 214 million in 2022. The increase in Nokia Technologies research and development expenses was primarily due to higher investments to drive creation of intellectual property.

Nokia Technologies selling, general and administrative expenses in 2023 were EUR 140 million, an increase of EUR 4 million, or 3%, compared to EUR 136 million in 2022.

Nokia Technologies other operating income and expenses in 2023 was an income of EUR 13 million, a change of EUR 45 million compared to an expense of EUR 32 million in 2022. The change in other operating income and expenses was primarily related to the reversal of loss allowance on certain trade receivables recorded in 2022 and the positive impact from hedging.

Operating profit

Nokia Technologies operating profit in 2023 was EUR 734 million, a decrease of EUR 474 million, or 39%, compared to an operating profit of EUR 1 208 million in 2022. The decrease in Nokia Technologies operating profit was primarily related to lower net sales, partially offset by a net positive fluctuation in other operating income and expenses. Nokia Technologies operating margin in 2023 was 67.6% compared to 75.7% in 2022.

Group Common and Other

For the year ended 31 December 2023 compared to the year ended 31 December 2022

The following table sets forth the operating results for Group Common and Other, and the percentage of net sales for the years indicated.

	2023		2022		
	EURm	% of net sales	EURm	% of net sales	Year-on-year change %
Net sales	**130**	**100.0**	**295**	**100.0**	**(56)**
Cost of sales	(136)	(104.6)	(307)	(104.1)	(56)
Gross profit	**(6)**	**(4.6)**	**(12)**	**(4.1)**	**(50)**
Research and development expenses	(120)	(92.3)	(117)	(39.7)	3
Selling, general and administrative expenses	(216)	(166.2)	(226)	(76.6)	(4)
Other operating income and expenses	(49)	(37.7)	37	12.5	(232)
Operating loss	**(391)**	**(300.8)**	**(318)**	**(107.8)**	**23**

Net sales

Group Common and Other net sales in 2023 were EUR 130 million, a decrease of EUR 165 million, or 56%, compared to EUR 295 million in 2022. The decrease in Group Common and Other net sales was related to reduced net sales from Radio Frequency Systems, mainly driven by the divested business carved out during 2023.

Gross profit

Group Common and Other gross profit in 2023 was negative EUR 6 million, compared to negative EUR 12 million in 2022. Group Common and Other gross margin in 2023 was negative 4.6% compared to negative 4.1% in 2022.

Operating expenses

Group Common and Other research and development expenses in 2023 were EUR 120 million, an increase of EUR 3 million, or 3%, compared to EUR 117 million in 2022.

Group Common and Other selling, general and administrative expenses in 2023 were EUR 216 million, a decrease of EUR 10 million, or 4%, compared to EUR 226 million in 2022. In 2023, variable pay accruals within Group Common and Other selling, general and administrative expenses were lower, compared to 2022.

Group Common and Other other operating income and expense in 2023 was an expense of EUR 49 million, a net negative fluctuation of EUR 86 million compared to an income of EUR 37 million in 2022. The net negative fluctuation in 2023 was primarily related to Nokia's venture fund investments. In 2023, Nokia's venture fund investments generated a loss of approximately EUR 70 million, compared to a benefit of approximately EUR 20 million in 2022.

Operating loss

Group Common and Other operating loss in 2023 was EUR 391 million, a change of EUR 73 million, compared to an operating loss of EUR 318 million in 2022. The change in Group Common and Other operating loss was primarily attributable to the lower other operating income somewhat offset by lower selling, general and administrative expenses.

Liquidity and capital resources

Financial position

At 31 December 2023, our cash and cash equivalents equaled EUR 6 234 million, an increase of EUR 767 million compared to EUR 5 467 million as of 31 December 2022. The increase was primarily attributable to net cash inflow from operating activities of EUR 1 317 million and net cash inflow related to interest-bearing financial investments of EUR 1 527 million, offset by capital expenditure of EUR 652 million, net cash outflow related to long-term borrowings of EUR 302 million, payment of principal portion of lease liabilities of EUR 239 million, dividends of EUR 621 million and share repurchases of EUR 300 million.

At 31 December 2023, our total cash and interest-bearing financial investments(1) equaled EUR 8 514 million, a decrease of EUR 730 million, compared to EUR 9 244 million as of 31 December 2022. The decrease was primarily attributable to the same factors as the ones that contributed to the increase in cash and cash equivalents except for the net cash inflow related to interest-bearing financial investments of EUR 1 527 million.

At 31 December 2023, our net cash and interest-bearing financial investments[(1)] equaled EUR 4 323 million, a decrease of EUR 444 million, compared to EUR 4 767 million as of 31 December 2022. The decrease was mainly attributable to capital expenditure of EUR 652 million, payment of the principal portion of the lease liabilities of EUR 239 million, dividends of EUR 621 million and share repurchases of EUR 300 million, offset by net cash inflow from operating activities of EUR 1 317 million.

(1) Non-IFRS measures. For the definition and reconciliation of non-IFRS measures to the most directly comparable IFRS measures, refer to the "Alternative performance measures" section.

Cash flow

The cash inflow from operating activities in 2023 was EUR 1 317 million, a decrease of EUR 157 million compared to a cash inflow of EUR 1 474 million in 2022. The decrease was primarily attributable to a decrease in net profit, adjusted for non-cash items, of EUR 3 238 million, a decrease of EUR 575 million compared to EUR 3 813 million in 2022, partially offset by a decrease in cash tied-up to net working capital of EUR 1 282 million in 2023 compared to EUR 1 843 million cash tied-up in 2022. The primary drivers for the decrease in cash tied-up to net working capital compared to 2022 were related to a decrease in inventories of EUR 443 million compared to an increase of EUR 991 million in 2022, and a decrease in receivables of EUR 304 million compared to an increase in receivables of EUR 451 million in 2022. These were partially offset by a decrease in liabilities of EUR 2 029 million compared to a decrease of EUR 401 million in 2022. The decrease in liabilities during 2023 was primarily attributable to a decrease in trade payables, a decrease in liabilities related to variable pay, and restructuring and associated cash outflows, partially offset by an increase in contract liabilities.

In 2023, the cash inflow from operating activities included paid taxes of EUR 576 million, an increase of EUR 195 million compared to EUR 381 million in 2022, interest received of EUR 178 million compared to EUR 65 million in 2022 and interest paid of EUR 241 million compared to EUR 180 million in 2022.

The cash inflow from investing activities was EUR 1 043 million in 2023, compared to a EUR 1 880 million cash outflow in 2022. Cash inflow from investing activities was primarily driven by net cash inflow of EUR 1 527 million of interest-bearing financial investments in 2023 compared to net cash outflow of EUR 1 198 million in 2022, partially offset by cash outflow due to the capital expenditure of EUR 652 million in 2023 compared to EUR 601 million in 2022 and net cash outflow from other non-current financial assets of EUR 49 million compared to EUR 66 million in 2022.

Major items of capital expenditure in 2023 included investments in R&D equipment, test equipment, hardware for telecommunication and cloud environment, repair or improvements of sites, shipyards and vessels.

In 2023, the cash outflow from financing activities was EUR 1 502 million, compared to a EUR 837 million cash outflow in 2022. The cash outflow was driven by repayments of long-term borrowings of EUR 798 million, dividend payments of EUR 621 million, share repurchases of EUR 300 million and payments of the principal portion of lease liabilities of EUR 239 million, partially offset by proceeds from long-term borrowings of EUR 496 million. In 2022, the cash outflow was driven by dividend payments of EUR 353 million, share repurchases of EUR 300 million and payments of the principal portion of lease liabilities of EUR 217 million.

Financial assets and debt

At 31 December 2023, our net cash and interest-bearing financial investments[(1)] equaled EUR 4 323 million consisting of EUR 8 514 million in total cash and interest-bearing financial investments[(1)], and EUR 4 191 million of long-term and short-term interest-bearing liabilities.

We hold our total cash and interest-bearing financial investments[(1)] predominantly in euro. Our interest-bearing financial investments mainly include high-quality money market and fixed income instruments with strict maturity limits and diversified counterparty risk limits. We also have a EUR 1 500 million revolving credit facility available for liquidity purposes. The facility has no financial covenants and remains undrawn.

At 31 December 2023, our interest-bearing liabilities consisted of EUR 378 million notes due in 2024, EUR 292 million notes due in 2025, EUR 500 million R&D loan from the European Investment Bank maturing in 2025, EUR 167 million R&D loan from the Nordic Investment Bank with final maturity in 2025, EUR 630 million notes due in 2026, USD 500 million notes due in 2027, EUR 500 million notes due in 2028, USD 74 million notes due in 2028, USD 206 million notes due in 2029, EUR 500 million notes due in 2031, USD 500 million notes due in 2039, and EUR 110 million of other liabilities. The EUR notes maturing in 2024, 2025, 2026, 2028 and 2031 as well as the USD notes maturing in 2027 and 2039, are issued by Nokia Corporation, while the USD notes maturing in 2028 and 2029 are issued by Lucent Technologies Inc., a predecessor to Nokia of America Corporation (Nokia's wholly-owned subsidiary, formerly known as Alcatel-Lucent USA Inc.). The loans from the Nordic Investment Bank and from the European Investment Bank are drawn by Nokia Corporation. For more information on our interest-bearing liabilities, refer to Note 5.2. Financial assets and liabilities, of our consolidated financial statements.

In June 2021, we exercised our option to extend the maturity date of the EUR 1 500 million revolving credit facility. Subsequent to the extension, EUR 1 412 million of the facility has its maturity in June 2026 and EUR 88 million of the facility has its maturity in June 2024.

We consider that with EUR 8 514 million of total cash and interest-bearing financial investments[(1)] and with our undrawn revolving credit facility, we have sufficient funds to satisfy our future working capital needs, capital expenditure, R&D investments, structured finance, venture fund commitments, acquisitions and debt service requirements, at least through 2024. We further consider that with our current credit ratings of BBB- by S&P Global Ratings, Ba1 by Moody's, and BBB- by Fitch, we have access to the capital markets should any funding needs arise in 2024.

We aim to maintain investment grade credit ratings.

Off-balance sheet arrangements

There are no material off-balance sheet arrangements that have, or are reasonably likely to have, a current or future effect on our financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that are material to investors, except for the purchase obligations and lease commitments, as well as guarantees and financing commitments disclosed in Note 6.1. Commitments, contingencies and legal proceedings, and in Note 5.4. Financial risk management, of our consolidated financial statements.

(1) Non-IFRS measures. For the definition and reconciliation of non-IFRS measures to the most directly comparable IFRS measures, refer to "Alternative performance measures" section.

Venture fund investments and commitments

We make financing commitments to a number of unlisted venture funds that make technology-related investments. The majority of the investments are managed by NGP Capital, a global venture capital firm backing exceptional entrepreneurs driving the convergence of the physical and virtual world.

As of 31 December 2023, our venture fund investments equaled EUR 784 million, compared to EUR 828 million as of 31 December 2022. For more information on the fair value of our venture fund investments, refer to Note 5.2. Financial assets and liabilities, of our consolidated financial statements.

As of 31 December 2023, our venture fund commitments equaled EUR 381 million, compared to EUR 433 million as of 31 December 2022. As a limited partner in venture funds, we are committed to capital contributions and entitled to cash distributions according to the respective partnership agreements and underlying fund activities. For more information on venture fund commitments, refer to Note 6.1. Commitments, contingencies and legal proceedings, of our consolidated financial statements.

Treasury policy

Treasury activities are governed by the Nokia Treasury Policy approved by the President and CEO within the authority granted by the Board of Directors and supplemented by operating procedures approved by the CFO, covering specific areas such as foreign exchange risk, interest rate risk, credit risk and liquidity risk. The objective of treasury's liquidity and capital structure management activities is to ensure that we have sufficient liquidity to go through unfavorable periods without being severely constrained by the availability of funds to execute Nokia's business plans and implement Nokia's long-term business strategy. We are risk-averse in our treasury activities.

Foreign exchange impact

We are a company with global operations and net sales derived from various countries, invoiced in various currencies. Therefore, our business and results from operations are exposed to changes in exchange rates between the euro, our reporting currency, and other currencies, such as the US dollar. The magnitude of foreign exchange exposures changes over time as a function of our net sales and costs in different markets, as well as the prevalent currencies used for transactions in those markets. Significant changes in exchange rates may also impact our competitive position and related price pressures through their impact on our competitors.

To mitigate the impact of changes in exchange rates on our results, we hedge material net foreign exchange exposures (net sales less costs in a currency) typically with a hedging horizon of approximately 12 months. For the majority of these hedges, hedge accounting is applied to reduce income statement volatility.

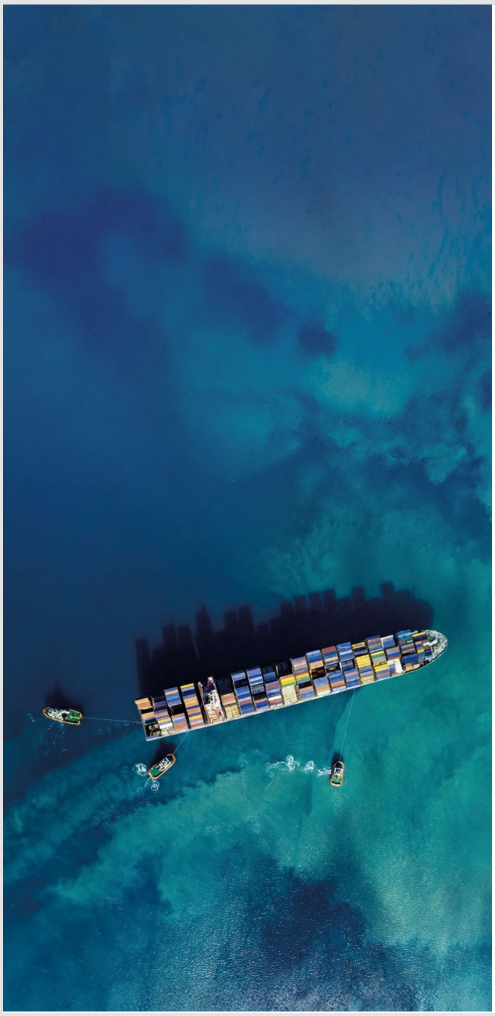
In 2023, approximately 25% of Group net sales and 30% of total costs were denominated in euros, and approximately 50% of Group net sales and 45% of total costs were denominated in US dollars. In 2023, approximately 5% of Group net sales and total costs were denominated in Chinese yuan and approximately 5% of Group net sales and total costs were denominated in Indian rupee.

The average currency mix for Group net sales and total costs:

Currency	2023 Net sales	2023 Total costs	2022 Net sales	2022 Total costs
EUR	~25%	~30%	~25%	~25%
USD	~50%	~45%	~50%	~50%
CNY	~5%	~5%	~5%	~5%
INR	~5%	~5%	~0%	~5%
Other	~15%	~15%	~20%	~15%
Total	**~100%**	**~100%**	**~100%**	**~100%**

For the full year 2023 compared to the previous year, the US dollar was weaker against the euro. The weaker US dollar in 2023 on a year-on-year basis had a negative impact on our net sales reported in euros. However, the weaker US dollar also contributed to slightly lower costs of sales and operating expenses on a year-on-year basis. In total, before hedging, the weaker US dollar on a year-on-year basis had a slightly negative effect on our operating profit in 2023.

For a discussion of the instruments used by us in connection with our hedging activities, refer to Note 5.4. Financial risk management, of our consolidated financial statements. Refer also to the "Risk factors" section.



For the **environment**, we emphasize two areas: climate and circularity. For climate, we look to be the leader in energy efficiency in silicon, software, and systems, providing the networks and operations skills to scale smart energy solutions. We also intend to accelerate our first mover ambition in energy efficiency in 5G-Advanced and 6G through early engagement in standardization and ecosystem development. For circularity, we focus on opportunities to promote hardware circularity and manage the sourcing and reuse of key source materials.

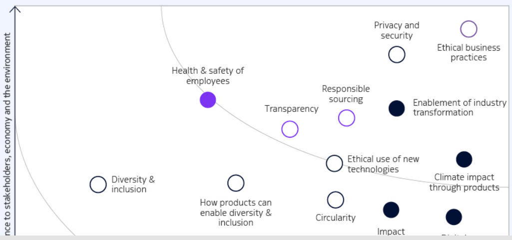
Industrial digitalization provides the opportunity to sustainably transform physical industries and cities through digitalization and connectivity. Our offering for industries and cities can enable decarbonization, resource efficiency, and improved safety. We are excited by the opportunities in digitalization enablement, cloud-based service delivery and partnership-driven use case solutions to enable net zero in key industries.

Security and privacy are positioned as the cornerstone of our product proposition. Product development follows the "Design for Security" methodology, and Nokia's security team partners with our customers to build and maintain secure networks, compliant with national regulations for critical telecom infrastructure.

We aim to **bridge the digital divide** using our broad product portfolio across terrestrial and non-terrestrial networks and focused partnering to address different demographics through digital skill building. Connectivity, combined with digital skills, enables increased equality of access to healthcare, education and employment for individuals and the opportunity to participate in the digital economy for small businesses.

In **responsible business** we work to ensure our business practices are aligned to our ethical and responsible values across our value chain. We collaborate closely with customers and suppliers to engage on systemic issues related to the environment, health and safety, mitigating the misuse of technology (and advocating for responsible AI principles), ethics, human rights and working conditions, as well as focusing on diversity, equity and inclusion in Nokia's own workforce.

Sustainability and corporate responsibility continued



Sustainable Development Goals

The United Nations SDGs and their targets remain a key framework for our sustainability work. SDGs 8, 9 and 13 are the most material for our business and reflect the areas in which we can have the greatest positive impact.

We believe that digitalization and enhanced connectivity will continue to play a critical role in accelerating and achieving all 17 SDGs. Here are examples of how the work we do actively contributes to our most material SDGs.

SUSTAINABLE DEVELOPMENT GOALS

Sustainability and corporate responsibility continued

Key sustainability targets

Our ESG targets are determined based on our sustainability strategy and material topics and are distributed across short, medium and long term. The key targets are listed in the table below which shows progress against selected targets.

Progress against select ESG targets in 2023

Strategic focus area	Target year	Base year	Target	2023 results	Status
Environment					
Climate	2030	2019	Our science-based target (SBT[1]): Reduce our greenhouse gas (GHG) emissions across our value chain (Scope 1, 2 and 3) by 50% between 2019 and 2030, and reach net zero by 2050.	Emissions covered by our SBT were 34 319 800 tons CO_2e,[2] which is a 9% decrease from 2022. Despite this decrease, our current SBT emissions are now at the same level as the 2019 baseline year. This means that the 2030 SBT is still not on track with a linear reduction trajectory. While we continue to accelerate innovations in product energy efficiency and supplier collaboration, the availability and take-up of renewable energy by Nokia's customers must rapidly increase to support the achievement of the interim target.	Not on track
	2030	2019	Our final assembly suppliers reach zero emissions by 2030.	Our final assembly suppliers' emissions were 38 500 tons CO_2e, which is a 49% reduction from 2019.	On track
	2030	2019	Our suppliers reduce GHG emissions by 50% by 2030.[3]	Our suppliers' emissions were 540 500 tons CO_2e, which is a 82% reduction from 2019. However, as this includes emissions data from hundreds of suppliers and the quality of allocated emissions data has been of concern, we are conscious that some of the reductions may be due to the quality of the data reported.	On track
	2030	2019	Our logistics' GHG emissions reduced by 73% by 2030.	Our logistics emissions were 140 900 tons CO_2e, which is a 54% decrease from 2019.	On track
	2023	N/A	Reach 75% renewable electricity in our own facilities.	Reached 75% renewable electricity in our own facilities.	Achieved
	2023	2019	Reach 65% reduction of our facilities' GHG emissions compared to 2019.	Reached 69% reduction of our facilities' GHG emissions.	Achieved
Circularity	2030	2019	95% circularity rate for waste from our offices, labs, manufacturing, installation and product takeback by 2030.	We have recognized areas where a high circularity rate has already been achieved and also areas requiring further action. There are still data gaps to be closed but data accuracy has increased. Annual waste circularity outcome for 2023 was 86%.	On track
Bridging the digital divide					
Connecting the unconnected and under-served	2030	2021	Helping our customers to connect the next 2 billion measured by number of subscriptions in Nokia radio customers' networks by 2030.	In line with Nokia's long term goal, we work with our customers to provide broadband based digital services on more subscriptions. The number of mobile broadband subscriptions in Nokia radio customers' networks has increased from 2022 to the end of 2023 by 372 million (2022-2023: 772 million)[4].	On track
	2025	2021	Harness Nokia technology, capabilities and funds to improve the lives of 1 500 000 through social digitalization projects,	We reached 130 832 reported direct beneficiaries[6] through social digitalization projects, building digital skills, connecting the unconnected or underserved and improving inclu	On track
Security and privacy					
Security and privacy	2023	N/A	95% mandatory training completion related to privacy.	In 2023, the mandatory training completion rate was 98%.	Achieved
Responsible Business					
Health & safety	2030	2016	100% of suppliers delivering high-risk activity to meet "H&S preferred supplier" status (score 4 or more out of 5) in our Health & Safety Maturity Assessment.	18% of relevant suppliers met H&S "Preferred" supplier status. To reach the 2030 target, Nokia continues to work with our supplier base, engaging and promoting the supplier safety competences, offering safety training and setting supplier workshops in order to improve supplier Health and Safety awareness and capability.	On track
	2023	N/A	Zero critical or fatal incidents for employees and suppliers.	In 2023, there were zero work-related fatal incidents involving employees. However, we regret three work-related fatal incidents resulting in the death of one contractor/subcontractor and two third-parties.[7]	Not achieved
Inclusion & diversity	2023	N/A	Reach a minimum of 27% female hires in global external recruits.	28% of external recruits were women. We achieved the 2023 target via increased marketing, communication and talent attraction activities to make Nokia's employer brand stand out for diversity-friendly employment policies and attract diverse talent.	Reached
Ethics & compliance	2030	2016	Maintain 85% favorability of employee/line manager engagement on ethics and compliance.	In 2023, 85% of employees said that their line manager talked to the team about the importance of ethics and compliance.	Achieved
	2023	N/A	Ethical Business Training completed by 95% of employees.	98% of employees completed Ethical Business Training.	Achieved
Responsible sourcing	2025	N/A	98% 3TG traceability and conflict-free status to smelter level in our supply chain as well as conflict-free status of the smelters. Extended due diligence and conflict-free status of cobalt, mica and two additional minerals.	As of 2023, we have achieved 81% traceability to the smelter level in our supply chain as well as conflict-free status of the smelters. We have also extended and conducted due diligence for cobalt and mica and mapped the supply chains for additional minerals. For those due-diligence will follow in the next years.	On track
	2025	2020	80% of suppliers achieve satisfactory sustainability score (based on aggregated weighted share) from supplier performance evaluation (based on Corporate Responsibility onsite audit programs, EcoVadis, CDP, Conflict minerals).	80% of suppliers, on average, received a satisfactory sustainability score in our assessment programs.	On track

(1)The current SBT covers the following activities: Scope 1: emissions from our facilities, car fleet and marine fleet own vessels. Scope 2: market-based emissions from purchased energy. Scope 3: emissions from the customer use of sold products (covering almost 100% of our current portfolio) and emissions from the logistics, the final assembly factories in our supply chain, and the marine fleet chartered vessels.
(2)CO_2e = carbon dioxide equivalents.
(3)Refers to our material suppliers.
(4)Source: GSMA Intelligence.
(5)Improving lives refers to increased digital connectivity and inclusion for 1 500 000 people.
(6)Individuals that independent from any relationship with the company were directly benefited by Nokia's contributions or activities related to digital connectivity and inclusion directly resulting from them.
(7)Nokia has revised its fatality-reporting criteria in 2023, to include third parties such as members of the public who are assessed as being impacted by an incident that is deemed within Nokia's control. This more closely aligns Nokia's reporting with some of its closest industry stakeholders and competitors.

Sustainability governance

The Board of Directors evaluates Nokia’s ESG practices, related risks and target setting, as well as their implementation and effectiveness across the Company.

In 2023, the Board reviewed Nokia’s sustainability strategy and targets, evolving ESG requirements and expectations, investor feedback, disclosure approach, net zero strategy and roadmap.

In addition, the Board’s committees monitor environmental and social developments and activities in the

Risk management

Sustainability-related risks and opportunities are part of our Enterprise Risk Management framework. We recognize and aim to mitigate the potential risks and negative impacts associated with our business whether related to technology, supply chains, the climate or people, while also driving opportunities within and beyond our business to contribute to achieving the UN SDGs. We have policies and processes for our identified material sustainability-related risks, including our Code of Conduct which reflects our values through clear and simple directions on ways of working for all employees and business partners. The main features of our risk management systems are described as part of our corporate governance statement (see Corporate Governance Statement—Risk management, internal control and internal audit functions at Nokia).

The “Risk factors” section of this report discusses the most important risk factors affecting our operations. These risks include sustainability-related issues such as:

- product safety and energy efficiency;
- environmental incidents;
- people safety and security;
- privacy and security, including cybersecurity threats
- potential human rights abuse through misuse of the technology we provide;
- potential lack of proper respect for human rights, fair labor conditions, the environment and supply chains;
- non-compliance with regulations or our supplier and customer requirements;
- violation of ethical standards, including our Code of Conduct;
- labor unrest and strikes;
- inability to retain, motivate, develop and recruit appropriately skilled employees;
- public harm to our brand;
- issues with trade tariffs and taxation, including tax disputes; and
- disruptions in our manufacturing, service creation, delivery, logistics or supply chain caused, for instance, by natural disasters, military actions, civil unrest, public health, and safety threats (including disease outbreaks), many of which may be fueled by the adverse effects resulting from climate change.

How these risks are managed, including related key policies and actions, is further discussed in the following paragraphs, in the context of the relevant topics.

Sustainability recognitions

We respond to key ratings and ranking organizations to drive greater transparency and external recognition of our work. For example, for 2023, we were assessed by Sustainalytics to be at low risk of experiencing material financial impacts from ESG factors. In early 2024, we were included in Sustainalytics’ 2024 ESG Top-Rated Companies list. The ESG Risk Ratings by Sustainalytics provide information for investors assessing financially material ESG issues that affect the long-term performance of their investments.

In the MSCI ESG Ratings assessment, we received a rating of AAA (on a scale of AAA–CCC). The MSCI ESG Ratings are used by investors to measure companies’ resilience to long-term, financially relevant ESG risks.

Further information on all our recognitions can be found on our website.

Accelerating our climate ambition

In 2023, Nokia collaborated with the Carbon Trust to investigate how to accelerate its net zero targets and the related pathway and levers. The Carbon Trust partners with leading businesses, governments and financial institutions to help turn their climate ambition into climate action.

In December 2023, the Group Leadership Team approved the plan to fast-forward both our net zero target (Scope 1, 2 and 3) and our interim 2030 Scope 1 and 2 targets.

- We have set a new long-term target to reach net zero GHG emissions across our value chain(1) by 2040
- We also aim to accelerate our existing interim 2030 target to reduce emissions across our own operations,(2) reaching an 83% reduction by 2030
- To ensure its targets are aligned with climate science, Nokia submitted its net zero letter of commitment to the Science Based Targets initiative (SBTi) in February 2024 and will submit the targets themselves for validation

Our key climate achievements in 2023

Our existing SBT is to reduce our total emissions by 50% between 2019 and 2030 across our value chain (Scope 1, 2 and 3)(3). Overall, Nokia's SBT carbon emissions in 2023 saw a reduction of 9% compared to 2022. Our Scope 1 GHG emissions in 2023 increased by 7 % to 111 100 tons CO_2e driven by our marine fleet, and our market-based[4] Scope 2 emissions reached 84 800 tons CO_2e. By the end of 2023, we had reduced our Scope 2 emissions by 37% compared to 2022. Our Scope 3 emissions included in the SBT were 34 123 900 tons CO_2e in 2023. This represents a reduction of 9 % over the previous year.

Despite this decrease, our current SBT emissions are now at the same level as the 2019 baseline year. This means that the 2030 target was not on track with the expected linear trajectory. While we continue to accelerate innovations in product energy efficiency and supplier collaboration, the availability and take up of renewable energy by Nokia's customers must rapidly increase to support the achievement of the interim target.

Climate actions in our value chain

More and more Nokia customers are accelerating their journey towards renewable energy. Therefore, from 2023 onward, we started to collect customer-specific emissions factors from our customers as we believe this could give a better indication of our total Scope 3 category 11 (use of sold products) GHG emissions than just using a GHG Protocol-mandated global emissions factor.

Therefore, in 2023, we also calculated a total Scope 3 category 11 emissions number based on blended emissions factors. The blended emissions factor is a combination of customer-specific emissions factors confirmed by customers, country-average emissions factors and global emissions factors. Our total Scope 3 category 11 emissions based on the 2023 blended emissions factor was 33 691 400 tons CO_2e. In this first year, the blended emissions consist of 5% calculated by customer-specific emission factors, 92% calculated by country-average emission factors and 3% calculated by a global emission factor. Nokia intends to further develop the collection and calculation of customer-specific emissions factors going forward.

We also work with our suppliers to reduce our upstream indirect emissions and to drive circular practice and innovation. In 2023, we continued and enhanced our supplier climate engagement and saw 458 of our key suppliers responding to CDP's request to disclose their climate performance information, while 283 also provided emission reduction targets.

We saw good results from our climate work with our suppliers, with our logistics suppliers achieving a 54% decrease in emissions over the 2019 baseline. Logistics emissions were 140 900 tons CO_2e in 2023. Our final assembly supplier emissions were 38 500 tons CO_2e, which is a 49% reduction from 2019.

Circularity

We aim to be a driver of circular practices in our industry.

We focus on opportunities to promote hardware circularity by managing the sourcing and reuse of key source materials.

We build on our existing waste processes and circular products and services offering, proactively increasing the takeback of products from customer modernization projects and end-of-life equipment and increasing the availability and sales of refurbished products.

We also look to increase the use of recycled materials in our products, augmenting the inclusion of recycled plastics, steel, copper, nickel and aluminum in our product design.

Our circularity highlights in 2023

We have a robust environmental management system and environmental policy. At the end of 2023, the coverage of employees within the scope of ISO 14001 certification was 90%.

We introduced our first Sustainable Finance Framework that underscores the importance of ESG within its business and financing structure. We successfully completed an inaugural EUR 500 million sustainability-linked bond.

We announced our sponsorship of a professorship with the University of Jyväskylä in Finland to explore the measurement of our industry's biodiversity impacts.

Our circularity achievements:

In 2023, we achieved 81% tin, tantalum, tungsten and gold traceability and conflict-free status and extended due diligence for cobalt and mica.

We introduced a circular metric to guide our operational circularity journey and to close the material loop. Our target is to be 95% circular with regard to waste in 2030.

As part of our drive for the refurbishment and reuse of our products in 2023, we sent around 2 610 metric tons of old telecommunications equipment for material recycling. Approximately 49 300 units were refurbished for reuse/resell purposes with a total weight of 290 metric tons.

We have a robust environmental management system and environmental policy, supported by documented processes and procedures to ensure their implementation. The system helps us to monitor our progress and identify needed improvements. Our own operational footprint is certified under the ISO 14001 environmental management system standard, and at the end of 2023 the coverage of employees within the scope of that certification was 90%.

Exploring biodiversity

Biodiversity is of increasing importance for our stakeholders. At Nokia we also look more broadly at our dependence on natural resources, including climate, biodiversity and geological diversity (geodiversity). By geodiversity, we mean the Earth's minerals, rocks, fossils, soils, sediments, landforms, topography and hydrological features such as rivers and lakes. In 2023, we started to work to understand the impacts affecting natural capital (including biodiversity and geodiversity) across our value chain.

As a part of a holistic approach to biodiversity Nokia expanded its forest protection efforts by establishing two new nature conservation areas in Finland. One of these areas covers 71 hectares in Northern Ostrobothnia and the other covers 14 hectares in the Capital Region. In 2023, our total protected area expanded to 242 hectares, comprising 131 hectares of forested areas, 11 islands and 111 hectares of marine environments.

In December, through its University Collaboration engagements Nokia announced a collaboration with the University of Jyväskylä and the Finnish Innovation Fund SITRA to improve biodiversity footprint assessments. The collaboration aims to help organizations develop effective strategies and measures to assess and reduce their biodiversity footprint.

We do business the right way

Our Third-Party Code of Conduct, which is applicable to our suppliers and partners, clearly states our expectations regarding ethical conduct. We ask our third parties to adhere to Nokia's Third-Party Code of Conduct. Third-party commercial partners, including distributors and indirect resellers, are required to annually certify compliance with this code, and high risk third parties are required to complete compliance training. This code is further supplemented by policies, procedures, and guidance documents covering a range of topics, including third-party screening procedures and corporate hospitality.

We also have a separate Code of Ethics that sets out further expectations for our President and CEO, Chief Financial Officer and Corporate Controller.

In 2023, we deployed annual mandatory training on ethical business practices for our employees. Our Ethical Business Training was completed by 98% of our employees, surpassing the agreed target of 95%.

We supplement our all-employee mandatory training with targeted training focusing on particular parts of our operations and addressing high risk areas, regulatory requirements and critical and emerging needs. We use a combination of videos, in-depth training modules, microlearning modules, animations, and live training sessions to educate employees about high-risk areas.

In 2023, more than 23 600 attendees received live training with over 35 compliance topics covered in about 75 sessions. For select topics, we provide short, animated "just-in-time" training modules that provide information at the time it is needed; these are triggered by specific employee actions. For example, a just-in-time training module on anti-competition risks is delivered to employees who are attending trade association meetings, and a module regarding our investigation process is delivered to employees and external individuals who raise concerns.

Anti-corruption and bribery

We employ a multi-faceted approach to prevent corruption, and we have clear and unambiguous policies concerning improper payments, facilitation payments, gifts and hospitality, sponsorships and donations and other areas of corruption risk. Our policies and expectations regarding our strict prohibition on improper payments and corrupt behavior apply to our employees, partners and suppliers.

We implement training and regularly communicate with our employees regarding legal and compliance risks, and we review these risks and our mitigation measures with the Company's senior leadership and Audit Committee of the Board of Directors.

In 2023, we created a new online anti-corruption training module and included several topics related to anti-corruption in our annual "Ethical Business Training," including: bribery workplace scenarios, policy information and special requirements when working with government officials.

We conduct periodic audits and risk assessments to ensure that we identify and respond to corruption risks across our operations. Our compliance operations reviews provide an in-depth assessment of a business or region's compliance programs and status, including a review of the strength of the culture of integrity. In addition, our compliance control framework assessments provide a deep analysis of compliance risks and controls associated with a specific business, country, or region.

These site or business reviews focus on identifying anti-corruption risks (as well as other risks) and developing, implementing, and monitoring responsive mitigation controls.

We also carry out risk-based due diligence and monitoring procedures for all third parties to assess and manage potential risks related to engaging and working with them. In 2023, we completed four compliance operation reviews and 13 compliance control framework assessments.

Nokia's Anti-Corruption Center of Excellence is a dedicated

Human rights

We are committed to the principles of the Universal Declaration of Human Rights, the United Nations Global Compact and the OECD Guidelines for Multinational Enterprises. We endorsed the United Nations Guiding Principles on Business and Human Rights in 2011. We encourage our suppliers and business partners to share our values.

Our Code of Conduct, together with our Human Rights Policy, sets out our approach to human rights. Our human rights processes cover the whole value chain, from supplier management to product end use, and we have set clear requirements for all areas separately.

The technology we provide can bring positive benefits to individuals and broader society. We have a robust Human Rights Due Diligence process that aims to ensure the technology we provide is not misused to limit the privacy or freedom of expression of any individual or group. This process, which is embedded in our global sales process, provides the mechanism and tools to effectively mitigate our most salient human rights risks arising from the potential misuse of the products and technology we provide.

Before any sale is made, we aim to identify the level of possible risk to human rights through potential misuse of our technology and provide mitigation if any risk is identified. The Human Rights Due Diligence process is initiated according to various triggers including technology type, customer, country and use case. Of the Human Rights Due Diligence cases handled in 2023, 96% of total cases were resolved as "Go" or "Go with Conditions" (63% and 33%) respectively and 4% as "No Go".

In addition to potential product misuse, human rights risks appear in our global supply chain (see the "Responsible sourcing" section and our Modern Slavery Statement published on our website).

We are a member of the Global Network Initiative, a multi-stakeholder group of companies, civil society organizations (including human rights and press freedom groups), investors and academics working together to protect and advance freedom of expression and privacy in the ICT sector. We have successfully completed our second independent GNI assessment, and the public report was made available in October 2023. The assessors highlighted Nokia's strong human rights culture, noting that many issues are flagged and addressed informally even prior to surfacing during the formal process. The GNI also noted our Human Rights Due Diligence processes encompassing relevant functions across the Company with strong escalation mechanisms. To ensure best-in-class human rights mitigations our Human Rights Due

Diligence process also went through an internal audit that began in 2022 and was completed in 2023, providing findings that led to increased digitalization of the process.

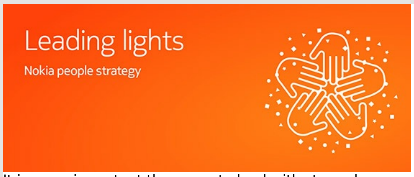
Responsible sourcing

We expect our suppliers to adhere to our Third-Party Code of Conduct and provide them with our Supplier Requirements, including the Responsible Business Alliance (RBA) Code of Conduct and additional, Nokia-specific sustainability requirements. The requirements cover such topics as environment, health, safety and security, privacy, risk management, labor and human rights, modern slavery, and ethics. We also run assessments and audits on our suppliers and provide training to ensure they meet our ethical requirements and continuously improve on their performance. We work with them on remediation actions and push to raise the bar on standards across our ecosystem.

In 2023, we implemented 635 supply chain audits, including 141 on-site in-depth audits on corporate responsibility topics, 48 on-site audits against our Supplier Requirements and 446 supplier assessments and follow-ups using the EcoVadis scorecards. We continued our work to increase the use of recycled material content in our products. As part of our

Our people

“At Nokia, we care about our people and believe they are critical to the long-term sustainability and competitiveness of our company.”



It is more important than ever to lead with strong human skills that promote psychological safety and create a working environment in which all people can live our Nokia essentials, with a priority on well-being to enable stronger and more resilient teams.

To help leaders role-model the right behaviors while retaining strategic and operational focus, we have implemented new initiatives in 2023, including:

- Developed and piloted face-to-face “Leadership4Impact” sessions for early and mid-level line managers
- Embedded enhanced psychological safety and leadership skills within people agendas
- Introduced Leader Lab sessions, designed to support leaders at all levels with learning and resources needed to lead in the current moment, addressing real-time challenges while building a strong leadership community
- Conducted the inaugural Nokia Leaders Summit, where top executives came together to focus on further developing our strategy with input from the investor and customer communities

Inclusion and diversity are core to the way we do business, innovate with our customers and partners, and attract talent. We bring together people with diverse identities, cognition, education, expertise and backgrounds. To make everyone feel valued and respected, we need an environment where all get equal opportunities to grow and develop, for the benefit and well-being of the individual, team and company.

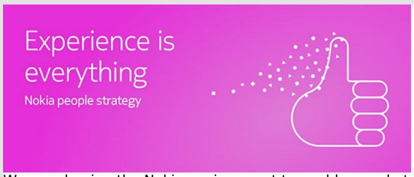
Nokia’s Inclusion & Diversity Community brings together employees across the organization to educate and share best practices to widen the impact of our inclusion and diversity initiatives. Since its start in June 2022, it has continuously increased its membership – with currently about 1 200 members – and has provided about 40 learning and sharing sessions.

In 2023, the focus has been on the inclusion of people with disabilities and neurodivergent employees, areas in which Nokia closely collaborates with nonprofit organizations for business disability inclusion such as Disability:IN and Inclusion Works.

To ensure that our managers can improve their leadership of multi-generational teams as well as their talent acquisition, retention and productivity, we published the Leading an Aging Workforce and the Successful Early Career Strategies e-books in 2023.

We also continued to drive improvements in gender diversity by monitoring pay equity. In 2023, our end-of-year review of Nokia’s gender pay gap showed a statistically insignificant unexplained pay gap.

We will continue to further emphasize and apply mitigations



We are shaping the Nokia environment to enable people to be empowered and productive. We strive toward increased flexibility in how and where employees work, simplified policies and processes, psychological safety, and the feeling of working in a united manner.

In 2023, we launched a new consolidated people tool, NokiaME, to simplify key global HR processes and tool, with a continued rollout over the next few years.

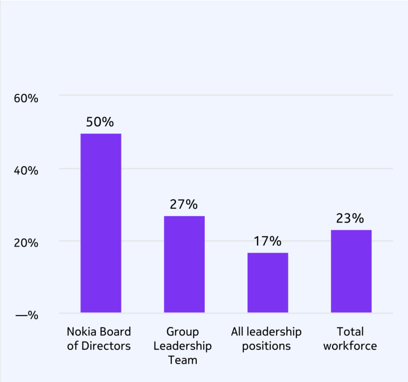
This year we again asked our employees what they needed and how management could better support them through our Annual Employee Survey and reached a high participation rate of 76% of Nokia employees, which represents a 10% increase in participation year over year. This feedback loop is essential for developing a better experience.

Employee demographics

The market for skilled employees in our business remains extremely competitive. Our workforce has evolved over recent years as we have introduced changes in our strategy to respond to our business targets and activities. These changes may in the future cause disruption and fatigue among employees, which, when coupled with our employee demographics and a dependence on key resources in some areas, make a focus on skill refreshing, well-being, inclusivity and enabling personal and professional growth imperative.

In 2023, the average number of employees was 86 689 (86 896 in 2022 and 87 927 in 2021).

At the end of 2023, 27% of our executive leadership positions were held by women, while the share of women in all leadership positions across Nokia was 17%. In total, women accounted for 23% of our workforce.



86 689

the average number of employees in 2023

27%

of our executive leadership positions were held by women at the end of 2023.

Well-being

On 19 October, Nokia announced a number of restructuring changes. As part of the support we want to offer our people during these difficult times, we have focused on providing guidance, tools and trainings to support employees and managers with timely, relevant information to navigate through this period of change.

The Personal Support Service, our global employee assistance program, is available to all employees and their family members, providing access to 24/7 professional support in their local language. These confidential resources play an important role in providing counselling and guidance during times of uncertainty.

In 2023, we continued to provide opportunities for employees to develop their capabilities in a wide range of wellbeing topics, from self-care and mindfulness to mental health and burnout.

Health, safety and labor conditions

The health and safety of our employees is the non-negotiable foundation of how Nokia conducts its business. Our Code of Conduct is the basis for labor conditions, enhanced by a full set of global HR policies and procedures that enable fair employment. We adhere to the International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work, and we meet, or where possible exceed, the requirements of labor laws and regulations wherever we have operations. We work hard to ensure decent working conditions and fair employment, recognizing both international and local laws and guidelines. Our health and safety management system is the basis for our overall Health and Safety program and an integral part of how we manage health and safety.

The system is certified with the internationally recognized ISO 45001 framework. The certification is provided by a third party, Bureau Veritas, and the share of our employees covered by the certification at the end of 2023 was 88%.

We implement training, analysis, assessments, and consequence management to address job-related health and safety risks. We run a wide range of programs targeted at improving our health and safety performance, while also encouraging employees and contractors to report near misses and dangerous incidents.

We see the highest risk exposure to health and safety in the delivery of field work, which is predominantly delivered by our contractors through tasks such as working at height, driving for work, and electrical installation and maintenance. Consequently, we have set stringent KPIs related to a supplier's ability to deliver safely, which is evaluated by our Health and Safety Maturity Assessment.

In 2023, there were no (zero) work-related fatal incidents involving employees. However, we regret the three work-related fatal incidents resulting in the death of one contractor / subcontractor and two third parties[1].

Any such serious incidents while carrying out work on behalf of Nokia are unacceptable. Each incident is thoroughly investigated to establish root causes and corrective actions are implemented to reduce the likelihood of future occurrences.

In 2023, Nokia ensured 100% of our suppliers formally pledged to follow the Nokia lifesaving rules.

Creating a safer work environment starts with good leadership. Our leaders are in a key position to strengthen the health and safety culture. Conducting a Senior Leader Safety Tour is a targeted, direct and strategic way to engage with local teams in order to influence safety behaviors. In 2023, Nokia set a target of having Senior Leaders lead forty safety tours of specific sites. Nokia recorded 144 such tours in 2023.

Our key standards Working at Height, Rigging & Lifting, Driving, Electrical and Underground Assets Avoidance are implemented with non-negotiables for effective controls to manage risk on a global scale in all markets. Incident management and reporting and investigation programs encourage all employees and contractors working on our behalf to report all incidents including near misses and high potential incidents.

Our assurance and governance programs have built in checkpoints to measure effectiveness. We have agreed metrics and KPIs designed into all levels of our programs and business processes to assure and manage risk in critical areas such as supplier qualification and project management, where high-risk activities are delivered. Operational reviews and internal and external audits provide the visibility and accountability needed to improve performance and reduce risk. In addition, regular reporting, communication of recovery plans and action management are in place to ensure effective program management.

By the end of 2023, 99% of suppliers delivering high-risk activity had been assessed using our Health and Safety Maturity Assessment process and 99% of the assessed suppliers were health and safety compliant. We also carried

Shares and shareholders

Share details

Shares and share capital

Nokia has one class of shares. Each Nokia share entitles the holder to one vote at general meetings of Nokia.

At 31 December 2023, the share capital of Nokia Corporation equaled EUR 245 896 461.96 and the total number of shares issued was 5 613 496 565. At 31 December 2023, the total number of shares included 87 895 712 shares owned by Group companies representing approximately 1.6% of the total number of shares and the total voting rights.

In 2023, under the authorization granted to the Board of Directors by the Annual General Meeting, the Parent Company issued 59 500 000 new shares without consideration to itself to fulfill the Company's obligation under the Nokia Equity Programs.

In 2023, under the authorization granted to the Board of Directors by the Annual General Meeting, the Parent Company issued 16 885 827 treasury shares to employees, including certain members of the Group Leadership Team, as settlement under Parent Company equity-based incentive plans and the employee share purchase plan. The shares were issued without consideration and in accordance with the rules of the plans.

Information on the authorizations held by the Board of Directors in 2023 to issue shares and special rights entitling to shares, to transfer shares and repurchase own shares, as well as information on related party transactions, the shareholders, stock options, shareholders' equity per share, dividend yield, price per earnings ratio, share prices, market capitalization, share turnover and average number of shares is available in this section "Shares and shareholders" and additionally in the "Corporate governance—Compensation" section and Notes 5.1. Equity and 3.2. Remuneration of key management in the consolidated financial statements.

In November 2023, the Board of Directors decided to cancel 78 301 011 Nokia shares held by the Company and repurchased under the second EUR 300 million phase of the EUR 600 million buyback program announced in 2022. The second phase of the buyback program started in January 2023 and ended in November 2023. The cancellation did not affect the Company's share capital nor total equity.

The Board of Directors held at 31 December 2023 a total of 900 190 shares and ADSs in Nokia, which represented approximately 0.02% of our total shares and voting rights excluding shares held by the Nokia Group. The President and CEO owned at 31 December 2023 a total of 1 473 060 shares.

There were no public takeover offers by third parties for Nokia's shares or by Nokia for other companies' shares during the 2023 and 2022 fiscal years.

Nokia does not have minimum or maximum share capital or a par value of a share.

31 December	2023	2022	2021	2020	2019
Share capital, EURm	246	246	246	246	246
Shares, (000s)	5 613 497	5 632 298	5 675 461	5 653 886	5 640 536
Shares held by the Group, (000s)	87 896	45 282	40 468	36 390	34 955
Number of shares excluding shares held by the Group, (000s)	5 525 601	5 587 016	5 634 993	5 617 496	5 605 581
Average number of shares excluding shares held by the Group during the year					
Basic, (000s)[1]	5 549 468	5 614 182	5 630 025	5 612 418	5 599 912
Diluted, (000s)[1]	5 585 923	5 670 020	5 684 235	5 612 418	5 626 375
Number of registered shareholders[2]	247 893	238 359	233 844	246 886	248 526

(1)Used in calculation of earnings per share for profit or loss for the year attributable to equity holders of the parent.
(2)Each account operator is included in the figure as only one registered shareholder.

Key ratios

For the year ended 31 December, Continuing operations	2023	2022	2021	2020	2019
Earnings per share, basic, EUR	0.12	0.75	0.29	(0.45)	0.00
Earnings per share, diluted, EUR	0.12	0.74	0.29	(0.45)	0.00
P/E ratio	25.42	5.77	19.22	neg.	—
Proposed dividend per share, EUR[1]	0.13	0.12	0.08	0.00	0.00
Total dividends, EURm[1][2]	730	676	449	—	—
Payout ratio[1]	1.08	0.16	0.28	—	—
Dividend yield %[1]	4.26	2.77	1.44	—	—
31 December	**2023**	**2022**	**2021**	**2020**	**2019**
Shareholders' equity per share, EUR	3.72	3.82	3.08	2.22	2.73
Share price[3]	3.05	4.33	5.57	3.15	3.30
Market capitalization, EURm	16 853	24 192	31 409	17 701	18 476

(1)The Board of Directors proposes to the Annual General Meeting to be authorized to decide in its discretion on the distribution of an aggregate maximum of EUR 0.13 per share as dividend from the retained earnings and/or as assets from the reserve for invested unrestricted equity.
(2)In 2023, total dividends is calculated based on the proposed Annual General Meeting authorization to the Board of a maximum distribution of EUR 0.13 per share for the financial year 2023, and the total number of shares on the date of issuing the financial statements for 2023. On the date of issuing the financial statements for 2023 the total number of Nokia shares is 5 613 496 565. Comparative amounts represent the actual total distribution to equity holders of the parent for the financial year presented.
(3)Closing Nokia share price at year end on Nasdaq Helsinki.

Share turnover

For the year ended 31 December	2023	2022	2021	2020	2019
Number of shares traded during the year (000s)[1]	7 754 279	10 294 615	16 560 334	13 903 762	11 003 630
Average number of shares excluding shares held by the Group during the year (000s)	5 549 468	5 614 182	5 630 025	5 612 418	5 599 912
Share turnover %	140	183	294	248	196

(1)Source: Nasdaq Helsinki, the NYSE composite tape and Euronext Paris.

The principal trading markets for the shares are Nasdaq Helsinki and Euronext Paris, in the form of shares, and the NYSE, in the form of ADSs.

Share price development

Nasdaq Helsinki

EUR	High	Low	Value
2023 Full year High/Low	4.70	2.70	
2023 Full year Average (Volume-weighted)			3.73
Year-end value 31 December 2023			3.05
Year-end value 31 December 2022			4.33
Change from 31 December 2022 to 31 December 2023			(29.6)%

New York Stock Exchange

USD	High	Low	Value
2023 Full year High/Low	5.04	2.94	
2023 Full year Average (Volume-weighted)			4.05
Year-end value 31 December 2023			3.42
Year-end value 31 December 2022			4.64
Change from 31 December 2022 to 31 December 2023			(26.3)%

Euronext Paris

EUR	High	Low	Value
2023 Full year High/Low	4.70	2.70	
2023 Full year Average (Volume-weighted)			3.76
Year-end value 31 December 2023			3.06
Year-end value 31 December 2022			4.34

Stock option exercises

Since 2019, Nokia has not administered any global stock option plans.

Dividend and share buybacks

The dividend to shareholders is Nokia's principal method of distributing earnings to shareholders. The dividend policy was updated at the Capital Markets Day in March 2021 to be "We target recurring, stable and over time growing ordinary dividend payments, taking into account the previous year's earnings as well as the company's financial position and business outlook".

The Board of Directors proposes to the Annual General Meeting 2024 that based on the balance sheet to be adopted for the financial year ended on 31 December 2023, no dividend is distributed by a resolution of the Annual General Meeting. Instead, the Board of Directors proposes to be authorized to resolve in its discretion on the distribution of an aggregate maximum of EUR 0.13 per share as dividend from the retained earnings and/or as assets from the reserve for invested unrestricted equity. The authorization would be used to distribute dividend and/or assets from the reserve for invested unrestricted equity in four installments during the authorization period, in connection with the quarterly results, unless the Board of Directors decides otherwise for a justified reason. The proposed total authorization for distribution of dividend and/or assets from the reserve for invested unrestricted equity is in line with the Company's dividend policy. The authorization would be valid until the opening of the next Annual General Meeting. The Board would make separate resolutions on the amount and timing of each distribution of dividend and/or assets from the reserve for invested unrestricted equity.

Nokia's Board of Directors has initiated a share buyback program under the current authorization from the Annual General Meeting to repurchase shares, with purchases expected to begin in the first quarter of 2024. The program targets to return up to EUR 600 million of cash to shareholders in tranches over a period of two years, subject to continued authorization from the Annual General Meeting.

In February 2022, Nokia's Board of Directors initiated a share buyback program under the authorizations from the Annual General Meetings 2021 and 2022 to repurchase shares to return up to EUR 600 million of cash to shareholders in tranches over a period of two years. The first phase of the share buyback program with a maximum aggregate purchase price of EUR 300 million started in February 2022 and ended in November 2022. The second EUR 300 million phase of the share buyback program started in January 2023 and ended in November 2023. The whole share buyback program has now been completed and the repurchased shares have been cancelled.

We distribute distributable funds, if any, within the limits set by the Finnish Companies Act as defined below. We make and calculate the distribution, if any, in the form of cash dividends, assets from the reserve for invested unrestricted equity, share buybacks, or in some other form, or a combination of these. There is no specific formula by which the amount of a distribution is determined, although some limits set by law are discussed below. The timing and amount of future distributions of retained earnings and/or assets from the reserve for invested unrestricted equity, if any, will depend on our future results and financial conditions.

Under the Finnish Companies Act, we may distribute retained earnings and/or assets from the reserve for invested unrestricted equity on our shares only upon a shareholders' resolution and subject to limited exceptions in the amount proposed by the Board. The amount of any distribution is limited to the amount of distributable earnings of the Parent Company pursuant to the last audited financial statements approved by our shareholders, taking into account the material changes in the financial situation of the Parent Company after the end of the last financial period and a statutory requirement that the distribution of earnings must not result in insolvency of the Parent Company. Subject to exceptions relating to the right of minority shareholders to request a certain minimum distribution, the distribution may not exceed the amount proposed by the Board of Directors.

Purchases of equity securities by the Company and affiliated purchasers

The table below presents additional information on the purchases of treasury shares in 2023:

Period	Total number of shares purchased	Average price paid per share, EUR	Total number of shares purchased as part of publicly announced plans or programs	Maximum value of shares that may yet be purchased under the plans or programs, EUR
January	6 156 200	4.44	6 156 200	272 653 299
February	5 991 500	4.40	5 991 500	246 290 179
March	6 871 300	4.39	6 871 300	216 111 864
April	5 556 000	4.19	5 556 000	192 858 651
May	7 845 100	3.77	7 845 100	163 286 436
June	7 725 400	3.83	7 725 400	133 733 303
July	8 004 933	3.69	8 004 933	104 229 737
August	9 117 690	3.55	9 117 690	71 835 889
September	8 030 700	3.68	8 030 700	42 257 048

Shareholders

At 31 December 2023, shareholders registered in Finland represented approximately 26% and shareholders registered in the name of a nominee represented approximately 74% of the total number of shares of Nokia Corporation. The number of directly registered shareholders was 247 893 at 31 December 2023. Each account operator (12) is included in this figure as only one registered shareholder.

Largest shareholders registered in Finland at 31 December 2023(1)

Shareholder	Total number of shares 000s	% of all shares	% of all voting rights
Solidium Oy	325 000	5.79	5.79
Keskinäinen Työeläkevakuutusyhtiö Varma	80 236	1.43	1.43
Keskinäinen Eläkevakuutusyhtiö Ilmarinen	75 227	1.34	1.34
Keskinäinen Työeläkevakuutusyhtiö Elo	46 066	0.82	0.82
Valtion Eläkerahasto	37 000	0.66	0.66
Oy Lival Ab	17 310	0.31	0.31
Svenska Litteratursällskapet i Finland r.f.	15 217	0.27	0.27
OP Finland Fund	14 833	0.26	0.26
Nordea Bank Abp	14 047	0.25	0.25
Sijoitusrahasto Seligson & Co	13 639	0.24	0.24

(1)Excluding nominee registered shares and shares owned by Nokia Corporation. Nokia Corporation owned 76 437 051 shares at 31 December 2023.

Breakdown of share ownership at 31 December 2023(1)

By number of shares owned	Number of shareholders	% of shareholders	Total number of shares	% of all shares
1–100	64 068	25.85	3 099 887	0.06
101–1 000	113 516	45.79	50 199 617	0.89
1 001–10 000	61 876	24.96	193 112 400	3.44
10 001–100 000	7 916	3.19	195 350 157	3.48
100 001–500 000	408	0.17	79 398 334	1.41
500 001–1 000 000	37	0.02	25 598 078	0.46
1 000 001–5 000 000	44	0.02	99 933 974	1.78
Over 5 000 000	28	0.01	4 966 804 118	88.48
Total	**247 893**	**100**	**5 613 496 565**	**100**

(1)The breakdown covers only shareholders registered in Finland, and each account operator (12) is included in the number of shareholders as only one registered shareholder. As a result, the breakdown is not illustrative of the entire shareholder base of Nokia.

By nationality	% of shares
Non-Finnish shareholders	74.45
Finnish shareholders	25.55
Total	**100.00**

By shareholder category (Finnish shareholders)	% of shares
Corporations	3.37
Households	7.79

Articles of Association

Articles of Association

Amendment of our Articles of Association requires a resolution of the general meeting of shareholders, supported by two-thirds of the votes cast and two-thirds of the shares represented at the meeting.

Registration

Nokia Corporation is organized under the laws of the Republic of Finland and registered in the Finnish Trade Register under business identity code 0112038-9. Under its current Articles of Association, Nokia's corporate purpose is to research, develop, manufacture, market, sell and deliver products, software and services in a wide range of consumer and business-to-business markets. These products, software and services relate to, among others, network infrastructure for telecommunication operators and other enterprises, the internet of things, human health and wellbeing, multi-media, big data and analytics, mobile devices and consumer wearables and other electronics. The company may also create, acquire and license intellectual property and software as well as engage in other industrial and commercial operations, including securities trading and other investment activities. The company may carry on its business operations directly, through subsidiary companies, affiliate companies and joint ventures.

Directors' voting powers

Under Finnish law, resolutions of the Board shall be made by a majority vote. A director shall refrain from taking any part in the consideration of an agreement between the director and the company or third party, or any other issue that may provide any material benefit to him or her, which may be contradictory to the interests of the company. Under Finnish law, there is no age limit requirement for directors, and there are no requirements under Finnish law that a director must own a minimum number of shares in order to qualify to act as a director. However, in accordance with the current Company policy, approximately 40% of the annual fee payable to the Board members is paid in Nokia shares purchased from the market or alternatively by using treasury shares held by Nokia, and the directors shall retain until the end of their directorship such number of shares that corresponds to the number of shares they have received as Board remuneration during their first three years of service (the net amount received after deducting those shares used for offsetting any costs relating to the acquisition of the shares, including taxes).

Share rights, preferences and restrictions

Each share confers the right to one vote at general meetings. According to Finnish law, a company generally must hold an Annual General Meeting called by the Board within six months from the end of the financial year. Additionally, the Board is obliged to call an Extraordinary General Meeting whenever such meeting is deemed necessary, or at the request of the auditor or shareholders representing a minimum of one-tenth of all outstanding shares. Under our Articles of Association, the Board is elected at least annually at the Annual General Meeting of shareholders for a term ending at the end of the next Annual General Meeting.

Under Finnish law, shareholders may attend and vote at general meetings in person or by proxy. It is not customary in Finland for a company to issue forms of proxy to its shareholders. Accordingly, Nokia does not do so. However, registered holders and beneficial owners of ADSs are issued forms of proxy by the Depositary.

To attend and vote at a general meeting, a shareholder must be registered in the register of shareholders in the Finnish book-entry system on or prior to the record date set forth in the notice of the general meeting. A registered holder or a beneficial owner of the ADSs, like other beneficial owners

Disclosure of shareholder ownership or voting power

According to the Finnish Securities Market Act, a shareholder shall disclose his or her ownership or voting power to the company and the Finnish Financial Supervisory Authority when the ownership or voting power reaches, exceeds or falls below 5, 10, 15, 20, 25, 30, 50 or 90% of all the shares or the voting rights. The term "ownership" includes ownership by the shareholder, as well as selected related parties, and calculating the ownership or voting power covers agreements or other arrangements, which when concluded would cause the proportion of voting rights or number of shares to reach, exceed or fall below the aforementioned limits. Upon receiving such notice, the company shall disclose it by a stock exchange release without undue delay.

Purchase obligation

Our Articles of Association require a shareholder that holds one-third or one-half of all of our shares to purchase the shares of all other shareholders that so request. A shareholder who becomes subject to the purchase obligation is also obligated to purchase any subscription rights, stock options or convertible bonds issued by the company if so requested by the holder. The purchase price of the shares under our Articles of Association is the higher of: (a) the weighted average trading price of the shares on Nasdaq Helsinki during the ten business days prior to the day on which we have been notified by the purchaser that its holding has reached or exceeded the threshold referred to above or, in the absence of such notification or its failure to arrive within the specified period, the day on which our Board otherwise becomes aware of this; or (b) the average price, weighted by the number of shares, which the purchaser has paid for the shares it has acquired during the last 12 months preceding the date referred to in (a).

Under the Finnish Securities Market Act, a shareholder whose voting power exceeds 30% or 50% of the total voting rights in a company shall, within one month, offer to purchase the remaining shares of the company, as well as any other rights entitling to the shares issued by the company, such as subscription rights, convertible bonds or stock options issued by the company. The purchase price shall be the market price of the securities in question. Subject to certain exceptions, the market price is determined on the basis of the highest price paid for the security during the preceding six months by the shareholder or any party in close connection to the shareholder. Subject to certain exceptions, if the shareholder or any related party has not during the six months preceding the offer acquired any securities that are the target for the offer, the market price is determined based on the average of the prices paid for the security in public trading during the preceding three months weighted by the volume of trade.

Under the Finnish Companies Act, a shareholder whose holding exceeds nine-tenths of the total number of shares or voting rights in Nokia has both the right and, upon a request from the minority shareholders, the obligation to purchase all the shares of the minority shareholders for the then current market price. The market price is determined, among other things, on the basis of the recent market price of the shares. The purchase procedure under the Finnish Companies Act differs, and the purchase price may differ, from the purchase procedure and price under the Finnish Securities Market Act, as discussed above. However, if the threshold of nine-tenths has been exceeded through either a mandatory or a voluntary public offer pursuant to the Finnish Securities Market Act, the market price under the Finnish Companies Act is deemed to be the price offered in the public offer, unless there are specific reasons to deviate from it.

Pre-emptive rights

In connection with any offering of shares, the existing shareholders have a pre-emptive right to subscribe for shares offered in proportion to the amount of shares in

Risk factors

Set forth below is a description of risk factors that could affect our business. Shareholders and potential investors should carefully review the following risk factors, in addition to other information contained in this report. The risk factors described below should not be construed as exhaustive. There may be additional risks that are unknown to us, and other risks currently believed to be immaterial that could turn out to be material.

These risks, either individually or collectively, could adversely affect our business, competitiveness, market share, sales, costs, expenses, results of operations, profitability, financial condition, liquidity, reputation, brand and share price. Unless otherwise indicated or the context otherwise requires, references in these risk factors to "Nokia", the "Nokia Group", "Group", "we", "us" and "our" mean Nokia's consolidated operating segments. Certain risks or events may be more prevalent with respect to the Group or a certain business group, business or part of the Group.

In evaluating the risks, one should not rely exclusively on the bullets in the below summary but read the full risk factor discussion. This report also contains forward-looking statements that involve risks and uncertainties presented in "Forward-looking statements" above.

Risk factors summary

Our capability to compete as a trusted partner for critical networks, and remain a leading provider of technology, software and services in the industries and markets in which we operate, is dependent on multiple external and internal factors, partially outside our control, such as:

Risks related to our strategy and its execution

- Sustained traffic growth over customers' networks, introduction of new use cases and low-latency services to drive the demand for our products;
- Reaching technology limits in key technologies which might change demand patterns for our products and competitive dynamics;
- Trends, such as cloudification, Open RAN and openness in general, virtualization and disaggregation with potential impact on our portfolio of products and services, competitive landscape, business models and our margin profile;
- The degree our investments, including venture funds, result in technologies, products or services that achieve or retain broad or timely market acceptance, answer to the expanding needs or preferences of our customers or consumers, or in breakthrough innovations, research assets, digitalization and intellectual property that we could otherwise utilize for value creation;
- Our success in acquiring or divesting businesses and technologies, integrating acquisitions, entering into licensing arrangements, forming and managing joint ventures or partnerships and in realizing the anticipated benefits, synergies, cost savings or efficiencies from these transactions;
- Our success in continuing to improve our organizational and operational structure for increased operational efficiency, executing our business plans and business models, in identifying and implementing the appropriate measures to improve cost-efficiency and in managing the inflationary pressure on costs in order to continue investments in R&D and future capabilities, including 5G-Advanced and 6G, enterprise, cloud, security, automation, digitalization, and development of new standard essential patents; and
- Our ability to meet our sustainability targets, including with respect to our greenhouse gas emission commitments, and to comply with stakeholder expectations and increasing number of regulations regarding sustainability activities

- Severity of inefficiencies, incidents, malfunctions or disruptions of our information technology systems and processes or disruptions of services relying on our own or third-party IT, including cybersecurity threats and incidents;
- Actual or perceived security or privacy breaches, as well as defects, errors or vulnerabilities in our technology and that of third-party providers;
- Our manufacturing, service creation, delivery, logistics or supply chain to operate without significant interruptions or shortages, including the impacts of geopolitical tensions and open conflicts feeding uncertainty in the global supply chain;
- Performance capabilities of our partners and suppliers, and their high standards to meet product quality, health, safety or security requirements or comply with other regulations or local laws, such as environmental or labor laws;
- Natural or man-made disasters, military actions, wars, labor unrest, civil unrest or health crises, such as another global pandemic, impacting our service delivery or production sites or the production sites of our suppliers, which are geographically concentrated; and
- Our ability to retain, develop, reskill and recruit appropriately skilled employees in the right activities and locations.

Intellectual property rights, technology and brand licensing

- Our ability to create new relevant technologies, products and services through our R&D, as well as our ability to protect our innovations and to maintain the strength of our intellectual property portfolio;
- Our ability to monetize our intellectual property for instance, due to market, regulatory and other developments, or court rulings in intellectual property-related litigation and other disputes;
- Uncertainty relating to the evolving global regulatory and standardization landscape relating to intellectual property;
- Developments in the concentrated smartphone market, the source of a significant portion of our patent licensing income;
- Success and profitability of technology licensing, brand licensing and other business ventures, including venture fund investments where the valuation and proceeds of our venture fund investments may fluctuate;
- Our ability to renew existing license agreements and conclude new license agreements regarding our intellectual property that we license to others on acceptable commercial terms, and the timing, cost, and potential need for litigation to achieve such renewals and new license agreements;
- Claims that we have allegedly infringed third parties' IPR; and
- Our ability to renew or finalize licenses regarding technologies that are licensed to us on acceptable commercial terms.

Geopolitical, legal, regulatory and compliance environment

- Direct and indirect regulation and political developments affecting trade, taxation, national security, competition law, export controls and sanctions, cyber security, supply chains, environmental, social and governance topics and anti-corruption;
- Geopolitical tensions, escalations or expansions into open conflicts, such as potential further developments related to the situations with Russia and Ukraine or in Gaza, risks related to increasing tensions in the Red Sea and the South China Sea;
- Changes in existing regulations or in their application, and emerging new regulations applicable to current or new technologies, products or telecommunications and technology sectors in general impacting our products, services or business;
- Our products, services and operations meeting all relevant quality, health, safety or security standards and other recommendations and regulatory requirements globally;
- Compliance with laws and regulations relating to privacy, data protection, and the protection or transfer of personal

Full risk factor discussion

Risks related to our strategy and its execution

We may be unable to successfully implement our strategic plans, sustain or improve the operational and financial performance of our business groups, correctly identify or successfully pursue business opportunities, correctly anticipate or successfully mitigate technological disruptions that have adverse effects on our business, or otherwise grow our business.

Our success is dependent on our ability to become and remain a leading provider of technology, software and services in the industries and markets in which we operate. However, there can be no assurance that we will correctly identify trends, opportunities or threats to pursue or mitigate to be able to achieve the goals or targets we have set. For example, our plans assume sustained growth in traffic over our customers' networks. For this to happen, video streaming needs to continue to grow significantly or new high-data use cases (for instance, Virtual Reality or Augmented Reality) need to be developed and drive high concurrency traffic. We also assume a growing number of use cases and demand for low latency services. Should these not materialize, demand for our products and services might be negatively affected.

Our path to continued technology leadership lies in long-term research and development to drive innovation across a comprehensive portfolio of network equipment, software, services and licensing. We are investing, for instance, in 5G-Advanced and 6G research, security and development of new standard-essential patents. The R&D of innovative products, services and technologies is a complex and uncertain process and there can be no assurance that our investments will result in technologies, products or services that achieve or retain broad or timely market acceptance, are commercially successful, answer to the expanding needs or preferences of our customers or consumers, or breakthrough innovations that we could otherwise utilize for value creation. As an example, while we believe that the progress of cloudification and open RAN and openness in general creates an opportunity for us to differentiate with our products and to serve our customers better, it may lead to entry of new competitors with different business models to build multi-vendor RAN networks. The virtualization and cloudification of core and radio networks and the convergence of IT and telecommunications may lower barriers of entry for IT and webscale companies in the traditional telecommunications industry or they may build up tight strategic partnerships with our traditional competitors or our communications service provider customers. The enhanced competition might result in increased price competition and negatively affect our margins. Virtualization and disaggregation might also affect other parts of our portfolio and lead to changes in competitive landscape, business models, and margin profile. Also, reaching certain technology limits, for example in Optical or in spectral efficiency gains in 6G, might adversely change the demand pattern and competitive dynamics for our products and services. We see the network as the key enabler of metaverse opportunities, but the network capabilities will need to evolve to fulfill the anticipated needs.

We implement our strategic plans, for instance, by entering into licensing arrangements, partnering with third parties and may engage in possible transactions, such as acquisitions, mergers, joint ventures or minority investments that could complement or improve our existing operations or technologies and enable us to grow our business. We also engage to divestitures of our existing businesses or operations in order to sharpen our business focus. Additionally, we may make investments in certain investment funds, including NGP Capital, that invest in other companies. There can be no assurance that our efforts to continuously improve our operations and efficiencies will or continue to generate the expected results or improvements or that we will achieve intended targets or financial objectives related to such efforts. For instance, the underlying rationale

deficiencies that would impact the reporting requirements applicable to us as a company listed on multiple stock exchanges. In outsourcing projects, we may encounter disruption to business resulting from broken processes and distraction of our employees that may need to train the partner's staff or be trained in the partner's systems. Adjustments to staff size and transfer of employees to the partner's companies could have an adverse effect on us, for instance through impacting the morale of our employees and raising complex labor law issues and resulting in the loss of key personnel. Additionally, partnering and outsourcing arrangements can create a dependency on the outsourcing company, causing issues in our ability to learn from day-to-day responsibilities, gain hands-on experience, adapt to changing business needs and properly transfer the specific know-how to the new outsourcing partners. Concerns could equally arise from giving third parties access to confidential data, strategic technology applications and books and records. There is also a risk that we may not be able to determine whether controls have been effectively implemented, and whether the partner company's performance-monitoring reports are accurate.

Our efforts aimed at managing and improving our financial or operational performance may not lead to targeted results, benefits, cost savings or improvements in our competitiveness.

We are continuously targeting increased efficiency of our operations. In October 2023, we announced strategic and operational changes to our business and a program to reset our cost base while protecting our R&D capacity and commitment to technology leadership. The program targets to lower our cost base on a gross basis (i.e. before inflation) by between EUR 800 million and EUR 1 200 million by the end of 2026 compared to 2023 assuming on-target variable pay in both periods.

Failure by us to determine the appropriate operational structure, prioritization of operating expenses and other costs, to identify and implement the appropriate measures to increase simplicity and improve cost-efficiency, or to maintain achieved efficiency levels, could limit our future investments and have a material adverse effect on our competitiveness, results of operations and financial condition. Our current and future cost-saving measures may be costly, potentially disruptive to operations, and may not lead to sustainable improvements in our overall competitiveness and profitability and there can be no assurance that such measures will be met as planned in contemplated timeframes or at all. Our plans may be altered in the future, including adjusting any projected financial or other targets. The anticipated costs or the level of disruption expected from implementing such plans or restructurings may be higher than expected. Efforts to plan and implement cost-saving initiatives may divert management attention from the rest of the business and adversely affect our business.

There are also several other factors that may prevent or delay a successful implementation of any cost-saving or efficiency improvement initiatives, including, among others, the following:

- the need to make additional investments in other areas such as 5G-Advanced and 6G, enterprise, security, cloud, development of new standard essential patents and automation/digitalization of services and our own operations;
- inaccuracy in our expectations with respect to market growth, customer demand and other trends;
- legislative constraints or unfavorable changes in legislation in the markets in which we operate influencing timing, costs and expected savings of certain contemplated initiatives;
- our ability to align and adjust resources, systems and tools, including digitalization and automation of processes, related to implementation of planned organizational changes;
- intended business plans may require us to inform or consult with employees and labor representatives, and such processes may influence the timing, costs and extent of

and energy efficiency in the longer term. Our failure, or perceived failure, to meet sustainability disclosure regulations, standards, practices or sustainability targets could result in legal sanctions, as well as negatively impact our reputation, employee retention, access to financing and the willingness of our customers and suppliers to do business with us.

Risks related to the general economic and financial market conditions and to the industries and markets in which we operate

Our sales and profitability have been and may in the future be materially and adversely affected by general economic and financial market conditions, such as accelerating inflation, increased global macroeconomic uncertainty, major currency fluctuations, higher interest rates and financing costs, and other developments in the economies where we operate.

We are a company with global operations with sales, R&D, manufacturing facilities, partners and suppliers located in various countries around the world. Adverse developments in and the general weakness of global economic conditions has had an adverse effect on us and the spending of our customers during the past year. For instance, the uncertain nature, magnitude, and duration of hostilities stemming from Russia's military invasion of Ukraine, including the potential effects of sanctions limitations, retaliatory cyber-attacks on the world economy and markets, or any other geopolitical escalation, for instance in the Middle East or Taiwan, could contribute to increased market volatility and uncertainty, which could have an adverse impact on macroeconomic factors affecting market demand, inflationary development and supply.

Any adverse developments in economies, such as increases in the level of inflation, interest rates or unemployment, may affect demand for consumables, such as mobile devices, mobile subscriptions and both the services that end-users subscribe to and the usage levels of such services, which may lead communications service providers to invest less in related infrastructure and services or to invest in low-margin products and services. This may further be mirrored as an adverse effect on the business of our patent, technology or brand licensees and our patent licensing income. Likewise, adverse developments in economic conditions may lead certain customer segments, such as webscale companies, transportation & logistics, energy, manufacturing, and public sector verticals, to invest less or delay spend in infrastructure and services to digitize their operations or to invest in low-margin products and services. Further, the purchasing power of our customers, particularly in developing markets, depends to a greater extent on the price development of basic commodities and currency fluctuations, which may render our products or services unaffordable. Economic slowdown may also lead to an overcapacity in supply and inflated inventories, and to delays and shortages in case of sharp recovery and ramp-up of demand with a potentially adverse effect on our ability and our suppliers' ability to deliver products and services in time. Increasing inflation and other current market conditions are driving cost increases in operations, materials and labor and may also result in strikes and other industrial actions.

General uncertainty and adverse developments in the financial markets could have a material adverse effect on our, our customers', suppliers' and other partners' ability to obtain sufficient or affordable financing on satisfying terms. Higher interest rates have increased the cost of financing. Uncertain market conditions may further increase the price of financing or decrease its availability if the banks and investors were to tighten lending standards or increase interest rates, or if certain assets would decline in value, which could lead to difficulties in raising funds or accessing liquidity necessary to maintain our financial condition and ongoing operations.

We face intense competition and are dependent on development of the industries and markets in which we operate. The markets are cyclical and are affected by many

virtualization of functions can induce a change in purchase behavior, resulting in favoring other vendors or in higher bargaining power versus Nokia due to more alternative vendors. Our customers may prefer best-of-breed from multiple vendors, a single vendor or turn to alternative vendors to maintain end-to-end services. Additionally, new competitors may enter the industry as a result of acquisitions or shifts in technology. Furthermore, some companies, including webscale companies, may drive a faster pace of innovation in telecommunications infrastructure through more collaborative approaches and open technologies across access, backhaul, core and management.

We expect to generate a significant share of our growth from new customers, including webscale companies and vertical customers, for example in transportation & logistics, energy, manufacturing, and public sector verticals. Each of these sectors may face adverse industry developments, which may significantly impact the size of investments addressable by us and our ability to address these investments, in terms of both having the right products available and being able to obtain new customers and having the right go-to-market capabilities and expertise to address the specific needs of these sectors. Furthermore, there are various incumbent and new actors competing with Nokia in these customer groups we strategically target. With these types of customers, the nature of competition and the required capabilities can be significantly different from the communications service provider market, including competition based on access network, core network, cloud infrastructure, platforms, applications and devices, and related services.

Competitive intensity remains high in the market as competitors seek to take share in 5G rollouts, which is creating a risk of persistent high price erosion in the industry. If domestic and global economic conditions worsen, overall spending on 5G infrastructure may be reduced or delayed, and spending in our other network products and services might be even more rapidly reduced to preserve the customer investment in 5G, which would adversely impact demand for our products and services in these markets. Further, any reduction in our market share in 5G compared with our installed base in 4G due to decisions to protect our profitability, inability to meet the customers' requirements or other reasons, may have a material negative effect on our scale and profitability.

We are dependent on a limited number of customers and large multi-year agreements. The loss of a single customer or contract, operator consolidation, unfavorable contract terms or other issues related to a single agreement may have a material adverse effect on our business and financial condition.

A significant proportion of the net sales and profits that we generate have historically been derived from a limited number of customers. As consolidation among existing customers continues, it is possible that an even greater portion of our net sales will be attributable to a smaller number of large communications service providers. These developments are also likely to increase the impact on our net sales based on the outcome of certain individual agreement tenders. Communications service providers are also increasingly entering into asset sharing arrangements, as well as joint procurement agreements, which may reduce their investments and the number of networks available for us to service. Furthermore, procurement organizations of certain large communications service providers sell consulting services to enhance the negotiating position of small operators with their vendors.

As a result of the intense competition in the industry, we may increasingly be required to agree to less favorable terms in order to remain competitive. Any unfavorable developments in relation to, or any change in the agreement terms applicable to, a major customer may have a material adverse effect on our business, results of operations and financial condition. Also,

We may be adversely affected by developments with respect to customer financing or extended payment terms that we provide to our customers. Unwillingness of banks or other institutions to provide guarantees or financing to our customers or purchase our receivables could impair our capability to enter agreements with new customers or markets, to mitigate payment risk and to manage our liquidity.

Requests for customer financing and extended payment terms are typical for our industry and uncertainty or lack of liquidity in the financing markets, among other things, may result in increased customer financing requests. In the event that export credit agencies face constraints on their ability or willingness to provide guarantees or financing to our customers, or there is insufficient demand from banks or other financial institutions to purchase receivables, such events could have a material adverse effect on our business and financial condition. Furthermore, reduced availability of credits by export credit agencies supporting our sales could affect our ability to attract customers and enter new markets thus facing the possibility of reduced sales.

In certain cases, the amounts and duration of these financings and trade credits, and the associated impact on our working capital, may be significant. We have agreed to extended payment terms for a number of our customers and may continue to do so in the future. Extended payment terms may result in a material aggregate amount of trade credits and even when the associated risk is mitigated by a diversified customer portfolio, defaults in the aggregate could have a material adverse effect on us.

All in all, our ability to manage our total customer financing and trade credit exposure depends on a number of factors, including, but not limited to market conditions affecting our customers, the levels and terms of credit available to us and our customers, the cooperation of export credit agencies and our ability to mitigate exposure on acceptable terms. We may be unsuccessful in managing the challenges associated with the customer financing and trade credit exposure that we may face from time to time, particularly in difficult financial conditions in the market. While defaults under financings, guarantees and trade credits to our customers resulting in impairment charges and credit losses have not been significant for us in the past, these may increase in the future, in particular in markets such as India with increased risks potentially affecting our customers. Further, commercial banks may not continue to be able or willing to provide sufficient long-term financing, even if backed by export credit agency guarantees, due to their own constraints, and certain of our competitors may also have greater access to such financing, which could adversely affect our competitiveness. Additionally, we have sold certain receivables to banks or other financial institutions, and any significant change in our ability to continue this practice could impair our capability to mitigate such payment risk and to manage our liquidity.

Nokia also arranges bank guarantees and bonds and issues commercial guarantees in customers' favor in relation to our business. In the event we are unable to collect outstanding guarantees and bonds, this could limit our possibilities to issue new guarantees and bonds, which are required in customer agreements or practices. We also face a risk that such commercial guarantees/bonds may be unfairly called.

Risks impacting our competitiveness

We may fail to invest effectively and profitably in new competitive high-quality products, services, upgrades and technologies or bring them to the market in a timely manner. We also may fail to adapt to changing business models.

Our business performance and results of operations will depend to a significant extent on our ability to succeed in the following areas:

- maintaining and developing a competitive product portfolio and service capability that is attractive to our customers, for instance by keeping pace with technological advances in our industry and pursuing technologies that become

developing technological innovations that make our innovations less relevant. In addition, reduced government funding and support for our R&D activities could affect our ability to develop new technology or products.

Inefficiencies, incidents, malfunctions or disruptions of information technology systems and processes could have a material adverse effect on our business and results of operations. As our business operations, including those we have outsourced, rely on complex IT systems, networks and related services, our reliance on the precautions taken by us and external companies to ensure the reliability of our own and third-party IT systems, networks and related services is increasing. Consequently, certain disruptions in IT systems and networks affecting us and our external providers could also have a material adverse effect on our business.

All IT systems, networks and processes are potentially vulnerable to damage, incidents, malfunction or interruption from a variety of sources. Our own and customer-facing operations rely on the efficient and uninterrupted operation of complex and centralized IT systems, networks and processes, which are integrated with those of third parties. The ongoing migration to cloud-based architectures and network function virtualization has introduced further complexity and associated risk.

We are, to a significant extent, relying on third parties for the provision of IT services. While we have outsourced certain functions, we have also increased our dependence on the reliability of external providers as well as on the security of communication with them. We may experience disruptions if our partners do not deliver as expected or if we are unable to successfully manage systems and processes together with our business partners. We will often need to use new service providers and may, due to technical developments or choices regarding technology, increase our reliance on certain new technologies, such as cloud, and certain other services that are used over the internet rather than using a traditional licensing model. Switching to new service providers and introducing new technologies is inherently risky and may expose us to an increased risk of disruptions in our operations, for instance due to network inefficiency or outage, a cybersecurity or a compliance incident, malfunctions, failure in disaster recovery or IT service continuity or other disruptions resulting from IT systems and processes.

We are constantly seeking to improve the quality and security of our IT systems. However, despite precautions taken by us, we may fail to successfully secure our IT and any malfunction or disruption of our current or future systems or networks, such as an outage in a telecommunications network used by any of our IT systems, or a cybersecurity incident, such as an attack, malware, ransomware or other event that leads to an unanticipated interruption or malfunction of our IT systems, processes, networks or data leakages, could have a material adverse effect on our business, results of operations and brand value. A disruption of services relying on our IT, for instance, could cause significant discontent among customers and their end-users resulting in claims, contractual penalties or deterioration of our brand value. Further, while we are increasing our investments in digitalizing our operations and transforming our IT, the legacy IT systems may be gradually more vulnerable to malfunction, disruptions or security incidents than the new IT systems replacing them.

We are exposed to risks related to information security. Our business model relies on solutions for distribution of services and software or data storage, which entail inherent risks relating not only to applicable regulatory regimes, but also to cybersecurity incidents and other unauthorized access to network data or other potential security risks that may adversely affect our business and/or compromise personal data.

Our business and operations rely on confidentiality of proprietary and other sensitive information, for instance related to our employees and our customers, including our government

available to us or our partners or subcontractors or stored in or through our products and services, could have a material adverse effect on us and harm our reputation and brand. Additionally, governmental authorities may misuse our network products to access the personal data of individuals without our involvement; for example, through the so-called lawful intercept capabilities of network infrastructure, impairing our reputation.

We may face problems or disruptions in manufacturing, service creation, delivery, logistics or supply chain. Such challenges include securing availability of resources or components to meet the demand, ability to adapt supply, defects in products or related software or services, and achieving required efficiencies and flexibility. Our suppliers

and partners may fail to meet product quality, health, safety or security requirements or comply with other regulations or local laws, such as environmental, social or labor laws. Additionally, adverse events, such as geopolitical disruptions, natural or man-made disasters, civil unrest or health crises, have and may continue to have an impact on our service delivery, production sites or the production sites of our suppliers and partners which are geographically concentrated.

We have an extensive supply network, including a geographically dispersed manufacturing network consisting of both our own manufacturing and contract manufacturing partners. We, or third parties that we have outsourced manufacturing and services delivery to, may experience difficulties in adapting supply to meet the changing customer demand, ramping up and down production, adjusting network implementation capabilities as needed on a timely basis, maintaining an optimal inventory level, adopting new manufacturing processes, finding the most timely way to develop the best technical manufacturing solutions for new products, managing the increasingly complex manufacturing process, service creation and delivery process or achieving required efficiencies and flexibility. In addition, these operations are exposed to various risks and potential liabilities, including those related to geopolitics,transition to low carbon economy, compliance with laws and regulations, exposure to environmental liabilities or other claims. In addition to operational complexity, these may increase our costs related to our supply chain.

Our manufacturing operations depend on obtaining sufficient quantities of fully functional products, components, sub-assemblies, software, services, energy and other resources on a timely basis. In certain cases, a particular component or service may be available only from a limited number of suppliers or from a single supplier in the supply chain. Suppliers have and may, from time to time, extend lead times, limit supplies, change their partner preferences, increase prices, provide poor quality supplies or be unable to adapt to changes in demand due to capacity constraints or other factors, which could adversely affect our ability to deliver our products and services on a timely basis or increase our costs. For example, the global semiconductor components shortage constrained our deliveries and the continuing uncertainty around components, raw material availability and potential energy shortages in the market limit our visibility and may continue to have an impact on our ability to supply to our customers and increase our costs. We are working closely not only with our suppliers to ensure component availability but also with our customers to ensure we can meet their needs. We are also building up critical material buffers to be prepared to balance short-term disruptions. Many of our competitors and also companies from other industries utilize the same contract manufacturers, component suppliers and service vendors. If they have purchased capacity or components ahead of us, or if there is significant consolidation in the relevant supplier base, this could prevent us from acquiring the required components or services, which could limit our ability to supply our customers and increase our costs.

segments in particular, requires and is dependent on our ability to retain, motivate, develop, reskill and recruit appropriately skilled employees and in particular those with relevant technical expertise. Our workforce has fluctuated over recent years as we have introduced changes in our strategy to respond to our business targets and endeavors. In October 2023, we announced strategic and operational changes to our business and a program to reset our cost base. The program is expected to lead to a 72 000 to 77 000-employee organization compared to the 86 000 employees Nokia has today. Such changes and uncertainty may cause disruption, fatigue and dissatisfaction among employees as our efforts to evolve our business and maximize operational efficiency continue. Employee motivation, energy, focus, morale and productivity may be reduced, causing inefficiencies and other problems across the organization resulting in the loss of key employees and increased costs in resolving and addressing such matters. The loss of key employees could result in resource gaps, some of which may only be noticed after a certain period of time or which negatively impact our relationship with customers, vendors or other business partners.

Our efforts to rebalance our workforce as planned may fail, for instance due to legal restrictions or collective bargaining agreements, which may result in a non-optimal workforce, larger than expected costs and not meeting our financial targets for such plans. Our inability to negotiate successfully with employee representatives or failures in our relationships with such representatives could result in strikes and other industrial actions by the employees which may in turn result in significant disruption in our day-to-day operations and higher ongoing labor costs. The market for skilled employees is increasingly competitive, particularly given the similar technology trends affecting various industries simultaneously and increased remote working expanding the job market for individual employees. We have encountered, and may in the future encounter, shortages of appropriately skilled employees or lose key employees or senior management. There can be no assurances that we will be able to implement measures successfully to retain or hire the employees we need. This may require significant time, attention and resources from our senior management and other key employees within our organization and may result in increased costs or otherwise have a material adverse effect on us.

In response to our experience during the COVID-19 pandemic and our employees' feedback, we provide flexibility for employees to work up to three days a week remotely and increased support for flexible working hours and fully virtual working. With the permanently increasing share of remote working, there is a risk that we may be exposed to a larger extent than before to impacts related to remote work and arranging the home office, such as increased attrition, decreased creativity or productivity of employees, supervising working hours, challenges in identifying, assessing and supporting employees in stress or poor mental health, inability to help employees to work safely in their home office environment or developing and supervising the execution of related internal policies leading to potential health issues and litigation.

Risks associated with intellectual property rights, technology and brand licensing

Our patent licensing income and other intellectual property-related revenues are subject to risks and uncertainties such as our ability to maintain our existing sources of intellectual property-related revenue, establish new sources of revenue and protect our intellectual property from infringement. A proportionally significant share of the current patent licensing income is generated from the smartphone market, which is rapidly changing and features a limited number of large vendors.

The continued strength of our intellectual property portfolios depends on our ability to create new relevant technologies, products and services through our R&D activities and to protect our intellectual property rights (IPR). If those

litigation. In addition, entering highly fragmented markets or markets with a high volume of licensees may affect our effectiveness and/or profitability.

We retained our patent portfolio after the sale of the Devices & Services business in 2014. Following the sale of the Devices & Services business, Nokia is no longer required to agree upon cross-licenses to cover Nokia's handset business, which has contributed to growing our licensing revenue. While this has been our practice, there can be no guarantee that this can be continued in the future. Also, in the past, parts of our intellectual property development were driven by innovation from the Devices & Services business. As we no longer own this business, our future intellectual property relating to the mobile phone sector may lessen and our ability to influence industry trends and technology selections may reduce.

We also enter into business agreements on behalf of our business groups, which may grant certain licenses to our patents. Some of these agreements may inadvertently grant licenses to our patents with a broader scope than intended, or they may otherwise make the enforcement of our patents more difficult.

To renew existing license agreements and conclude new license agreements with potential licensees, we may and have engaged in legal actions to enforce our intellectual property rights against unlawful infringement, the outcomes of which are uncertain.

Intellectual property-related disputes are common in the technology industry. While we strive to reach negotiated settlements of any disputes in relation to license agreements with companies using our intellectual property, sometimes it is necessary to engage in litigation or arbitration in order to renew existing license agreements which have expired or conclude new license agreements with unlicensed parties.

In certain cases, we have engaged in litigation or arbitration proceedings to enforce our rights, for instance to enforce our patents or to establish the terms of a patent license agreement. Due to the nature of litigation and arbitration proceedings, there can be no assurances as to the final outcome, timing or costs involved in such litigation or arbitration proceedings or as to our ability to renew existing license agreements or conclude new license agreements with potential licensees on acceptable commercial terms.

In other cases, other companies have commenced and may continue to commence actions against us seeking to establish the invalidity of our intellectual property, including our patents, or to contest our licensing practices or file competition law complaints with courts or competition authorities. In the event that one or more of our patents is challenged, a court may invalidate the patent or determine that the patent is not enforceable. The outcome of court proceedings is difficult to predict and, consequently, our ability to use intellectual property for revenue generation may from time to time depend on favorable court rulings. Additionally, if any of our patents is invalidated, or if the scope of the claims in any patents is limited by a court decision, we could be prevented from using such patents as a basis for product differentiation or from licensing the invalidated or limited portion of our IPR. Even if such a patent challenge is not successful, the related proceedings could be expensive and time-consuming, divert the attention of our management and technical experts from our business and have an adverse effect on our reputation. Any diminution in the protection of our IPR could cause us to lose certain benefits of our R&D investments.

While the primary source of Nokia Technologies business group net sales and profits is licensing of the Nokia patents, we are also engaged with licensing of technologies and of the Nokia brand, as well as with other business ventures, including technology innovation and incubation. Expected net sales and profitability for these businesses may not materialize as planned or, for some of these businesses, at all.

There can be no assurances that our Nokia Technologies

In line with standard practice in our industry, we generally indemnify our customers for certain intellectual property-related infringement claims initiated by third parties relating to products or services purchased from us. These may include claims from non-practicing entities having no product or service business. If such claims are made directly against our customers, we may have limited opportunities to participate in the processes including in negotiations and in defenses, or to evaluate the outcomes and resolutions in advance. All IPR indemnifications can result in significant payment obligations for us that are difficult to estimate in advance. Moreover, our indemnification responsibilities typically arise whether or not the IPR assertions against our customers have merit.

Since all technology standards that we use and rely on, including mobile communication technologies such as the Universal Mobile Telecommunications System (UMTS), Long-Term Evolution (LTE) and 5G, or fixed line communication technologies, include certain IPR, we cannot avoid risks of facing claims for infringement of such rights due to our reliance on such standards. We believe the number of third parties declaring their patents to be potentially relevant to these standards is increasing, which may increase the likelihood that we will be subject to such claims in the future. As the number of market entrants and the complexity of technologies increase, it remains likely that we will need to obtain licenses with respect to existing and new standards from other licensors. While we believe most of such IPR actually found to be essential to a particular standard carries an obligation to be licensed on fair, reasonable and non-discriminatory terms, not all intellectual property owners agree to apply such terms, nor do all owners agree on what is fair, reasonable and non-discriminatory. As a result, we have experienced costly and time-consuming litigation proceedings against us and our customers or suppliers over such issues and we may continue to experience such litigation in the future.

From time to time, certain existing patent licenses may expire or otherwise become subject to renegotiation. The inability to renew or finalize such arrangements or renew licenses with acceptable commercial terms may result in litigation, which may be expensive and time-consuming and divert the efforts of our management and technical experts from our business and, if decided against us, could result in unfavorable judgments or restrictions on our ability to sell certain of our products or require us to pay increased licensing fees, fines or other penalties and expenses, and/or to enter into costly settlements.

Our patent license agreements may not cover all the future businesses that we may enter, our existing business may not necessarily be covered by our patent license agreements if there are changes in our corporate structure or our subsidiaries, or our newly acquired businesses may already have patent license agreements with terms that differ from similar terms in our patent license agreements. This may result in increased costs, restrictions in the use of certain technologies or time-consuming and costly disputes whenever there are changes in our corporate structure or our subsidiaries, or whenever we enter into new business areas or acquire new businesses.

We make accruals and provisions to cover our estimated total direct IPR costs for our allegedly infringing products. Our estimated total direct IPR costs take into account items such as payments to licensors, accrued expenses under existing agreements and provisions for potential liabilities. We believe our accruals and provisions are at an appropriate level. The ultimate outcome, however, may differ from the provided level, which could have an adverse impact on us.

Risks stemming from geopolitical, legal, regulatory and compliance environment

Current international trends show increased enforcement activity in areas such as national security, competition law, export control and sanctions, privacy, cybersecurity, climate change, human rights and anti-corruption. Furthermore, we have observed an increase in the adoption of surveillance, data

Export controls, tariffs or other fees or levies imposed on our products and environmental, health, product safety, data protection and security, consumer protection, money laundering and other regulations that adversely affect the export, import, technical design, pricing or costs of our products could also adversely affect our sales and results of operations. Further, we rely on multilateral trade regimes to help ensure a balanced playing field. Conflicts between countries and geopolitical tensions may lead to implementation of multiple and possibly conflicting unilateral measures or uncertainties impacting trade of products and services and which may also affect our customers' ability or willingness to invest in capital expenditures and increase our costs or have adverse impacts on our operations and supply chain.

We have a significant presence in emerging markets in which the political, economic, legal and regulatory systems are less predictable than in countries with more developed institutions. These markets represent a significant portion of our total sales, and a significant portion of expected future industry growth. Most of our suppliers are located in, and our products are manufactured and assembled in, emerging markets, particularly in Asia. Our business and investments in these markets may be subject to risks and uncertainties, including unfavorable or unpredictable treatment in relation to tax matters, exchange controls, restrictions affecting our ability to make cross-border transfers of funds, regulatory proceedings, unsound or unethical business practices, challenges in protecting our IPR, information security, nationalization, inflation, currency fluctuations or the absence of or unexpected changes in regulation, as well as other unforeseeable operational risks.

Our business and results of operations may be adversely affected by regulation favoring the local industry participants, as well as other measures with potentially protectionist objectives or outcomes that host governments in various countries may take, including the introduction of local technical standards that divert from the globally adopted standards. Governments and regulators, particularly after changes in political regimes, may make legal and regulatory changes, slow down or reverse the adoption of favorable policy measures, or interpret and apply existing laws in ways that make our products and services less appealing to customers or require us to incur substantial costs, change our business practices or prevent us from offering our products and services. In particular, there is a growing trend in many countries to require minimum local content in products and/or services, and we may be required to invest in certain movement of operations or joint ventures to retain market share. Restrictive government policies or actions, such as the ones we saw in relation to the COVID-19 pandemic, or limitations on visas or work permits for certain foreign workers, may make it difficult for us to move our employees into and out of these jurisdictions. Our operations and employee recruitment and retention depend on our ability to obtain the necessary visas and work permits for our employees to travel and work in the jurisdictions in which we operate. The impact of changes in or uncertainties related to general regulation and trade policies could adversely affect our business and results of operations even in cases where the regulations do not directly apply to us or our products and services.

Changes in various existing regulations or in their application to current or new technologies, products or telecommunications and technology sectors in general, or emerging new regulation in areas such as security, privacy, digital economy or sustainable finance, may adversely affect our operations and business results.

We develop our products based on existing regulations and technical standards. In the case of new technology, we must often rely on our predictions for and interpretation of unfinished technical standards and upcoming or draft regulations or, in certain cases, have products developed in the absence of applicable regulations and standards

and challenges related to such topics as intellectual property rights, security, confidentiality, and privacy.

We are seeing an increase in climate and other sustainability-related regulations and customer requirements globally. In the longer term, such regulations or requirements could impact, for instance, our energy, component and logistic costs or competitiveness of our product offering, as well as affect availability of financing from ESG-focused investors or financial institutions. Changes to existing regulation related to Sustainable Finance, such as the EU Taxonomy Regulation and its delegated acts, the new EU Corporate Sustainability Reporting Directive and the related delegated acts, as well as announced and upcoming regulations such as the EU Carbon Border Adjustment Mechanism Regulation, the EU Corporate Due Diligence Directive, the US SEC Climate Disclosure Rule, the California Corporate Data Accountability Act and the Climate Related Financial Risk Law will lead to more detailed reporting obligations, controls and documentation requirements and could also affect our ability to work with certain suppliers, as well as have an impact on how our products and sustainability footprint are perceived by the markets. For example, the EU Taxonomy Regulation aims to define rules for which economic activities contribute to sustainability objectives and mandates companies to report the share of their turnover, capital expenses and operating expenses aligned with specified technical criteria. If our business activities do not meet all the technical criteria as defined in the EU Taxonomy Regulation, or if our offering is not recognized by other similar standards developed around the world, it could potentially have some impact on our financing costs, share price or brand value in the longer term, depending on how such standards are interpreted and used by the markets, financial institutions and investors in the future.

We operate in many jurisdictions around the world, and we are subject to various legal frameworks addressing corruption, fraud, competition, privacy, security, trade policies, environment, human rights, supply chains and other risk areas. At any given time, we may be subject to inspections, investigations, claims, and government proceedings, and the extent and outcome of such proceedings may be difficult to estimate with any certainty. We may be subject to material fines, penalties and other sanctions as a result of such investigations.

Bribery and anti-corruption laws in effect in many countries prohibit companies and their intermediaries from making improper payments to public officials or private individuals for the purpose of obtaining new business, maintaining existing business relationships or gaining any business advantage. Certain anti-corruption laws such as the United States Foreign Corrupt Practices Act (FCPA) also require the maintenance of proper books and records, and the implementation of controls and procedures in order to ensure that a company's operations do not involve corrupt payments. Since we operate throughout the world and given that some of our customers are government-owned entities and that our projects and agreements often require approvals from public officials, there is a risk that our employees, suppliers or commercial third-party representatives may take actions that are in violation of our compliance policies and of applicable anti-corruption laws. In many parts of the world where we operate, local practices and customs may be inconsistent with our policies, including the Nokia Code of Conduct, and could violate anti-corruption laws, including the FCPA and the UK Bribery Act 2010, and applicable European Union regulations, as well as applicable economic sanctions, embargoes and applicable competition and privacy laws. Our employees, or other parties acting on our behalf, could violate policies and procedures intended to promote compliance with anti-corruption laws, economic sanctions, competition or privacy laws or other applicable regulations. Violations of these laws by our employees or other parties acting on our behalf, regardless of whether we had participated in such acts or had knowledge of such acts, could

proceedings or agreement-related disputes are difficult to predict. An unfavorable resolution of a particular lawsuit, arbitration proceeding or agreement-related dispute could have a material adverse effect on us. The investment or acquisition decisions we make may subject us to litigation arising from minority shareholders' actions and investor dissatisfaction with the activities of our business. Shareholder disputes, if resolved against us, could have a material adverse effect on us.

We record provisions for pending claims when we determine that an unfavorable outcome is likely and the loss can reasonably be estimated. Although we believe our provisions for pending claims are appropriate, due to the inherent uncertain nature of legal proceedings, the ultimate outcome or actual cost of settlement may materially differ from estimates.

Although our products are designed to meet all relevant safety standards and other recommendations and regulatory requirements globally, we cannot guarantee we will not become subject to product liability claims or be held liable for such claims, which could have a material adverse effect on us. We have been involved in several lawsuits alleging adverse health effects associated with our products, including those caused by electromagnetic fields, and the outcome of such procedures is difficult to predict, including potentially significant fines or settlements. Even a perceived risk of adverse health effects of mobile devices or base stations could have a material adverse effect on us, for instance, through a reduction in the demand for mobile devices, and a decreased demand for mobile networks or increased difficulty in obtaining sites for base stations.

For a more detailed discussion of litigation to which we are a party, refer to Note 6.1. Commitments, contingencies and legal proceedings, in our consolidated financial statements.

We are involved in joint ventures and other affiliated companies with their own governance and system infrastructure and are exposed to risks inherent to companies under joint management or not having direct management control.

We have a number of joint ventures, including those where Nokia is the minority partner, and other affiliated companies with their own governance and system infrastructure where Nokia does not have direct management control. The agreements related to our joint ventures may require unanimous consent or the affirmative vote of a qualified majority of the shareholders to take certain actions, thereby possibly slowing down the decision-making process or impairing our ability to implement our key policies and practices, such as our compliance processes and culture, in a comprehensive or timely manner. In addition, joint venture companies and other affiliated companies having their own governance and system infrastructure, such as our local service companies focusing on networks field services, involve inherent risks such as those associated with a complex corporate governance structure, lack of transparency or uniform controls and procedures and consequent risks of compliance breaches or other similar issues, or issues in dissolving such entities or divesting their shareholdings, assets and liabilities, and may also involve negative public perceptions caused by the joint venture partner that are adverse to us.

We engage in the installation and maintenance of undersea telecommunications cable networks and related telecom solutions. During this activity, we may cause damage to existing undersea infrastructure, for which we may ultimately be held responsible.

We supply, install and maintain submarine optical fiber cable networks linking mainland to islands, island to island or several points along a coast. Our activities also include the provision of optical fiber infrastructure to oil and gas platforms and other offshore installations. Despite precautionary measures, there is a risk that previously laid infrastructure, such as third-party fiber optic cables, electrical power lines or hydrocarbon pipelines, may go undetected and be damaged during the process of laying or maintaining the telecommunications cables. Such an event could potentially cause temporary

taxable income within the relevant tax jurisdiction. Such deferred tax assets are also based on our assumptions on future taxable earnings, and these may not be realized as expected which may cause the deferred tax assets to be materially reduced. Any such reduction could have a material effect on us. As an example, Nokia derecognized EUR 2.9 billion deferred tax assets related to Finland in 2020 and re-recognized EUR 2.5 billion of deferred tax assets related to Finland in 2022. Additionally, our earnings have been unfavorably affected in the past, and may continue to be in the future, in the event that no tax benefits are recognized for certain deferred tax items.

We may not have access to sources of funding on favorable terms, or at all.

In periods when the capital and credit markets experience significant volatility, the amounts, sources and cost of capital available to us may be adversely affected. Deteriorating economic conditions or financial uncertainty in any of the markets in which we sell our products could reduce business confidence and adversely impact spending patterns, and thereby could adversely affect the amounts, sources and cost of capital available to us. Our business requires a significant amount of cash and we continue to invest in our R&D and other future capabilities. We rely on multiple sources of funding for short-term and long-term capital and aim to minimize the liquidity risk by maintaining a sufficient cash position and having committed credit lines in place. However, if economic conditions deteriorate or the credit market tightens, there can be no assurances that we will be able to generate sufficient amounts of capital or to maintain an efficient capital structure from time to time.

We also may not be able to have access to additional sources of funds that we may need from time to time with reasonable terms, or at all. If we cannot access capital or sell receivables on a commercially viable basis, our business, financial condition and cash flow could materially suffer.

We may not be able to maintain our investment grade credit ratings

Moody’s, S&P Global Ratings, Fitch and other credit rating agencies have assigned credit ratings to us. Following the upgrades by Moody’s and S&P Global Ratings in February 2023, we updated our goal from re-establishing investment grade credit ratings to maintaining our investment grade credit ratings. However, there can be no assurances that we will be able to maintain our current investment grade credit ratings. In the event our credit rating is downgraded, it could have a material adverse effect, for instance, on our cost of funds and related margins, our business and results of operations, financial condition, liquidity, or access to capital markets.

Due to our global operations, our net sales, costs and results of operations, as well as the US dollar value of our dividends and market price of our ADSs, are affected by exchange rate fluctuations.

We operate globally and are therefore exposed to foreign exchange risks in the form of both transaction risks and translation risks. Our policy is to monitor and hedge foreign exchange rate exposures within defined exposure identification horizons. We manage our operations to mitigate, but not to eliminate, the impacts of exchange rate fluctuations and our hedging activities may prove unsuccessful in mitigating the potentially negative impact of exchange rate fluctuations. Additionally, significant volatility in the relevant exchange rates and interest rates may increase our hedging costs, as well as limit our ability to hedge our exchange rate exposures including, in particular certain emerging market currencies. Furthermore, exchange rate fluctuations may have an adverse effect on our net sales, costs and results of operations, as well as our competitive position, through their impact on our customers, suppliers and competitors.

We also experience other financial market-related risks, including changes in interest rates and in prices of marketable securities that we own. We may use derivative financial

Risks associated with ownership of our shares

The amount of dividend and/or repayment of capital and other profit distributions such as share buybacks to shareholders for each financial period is uncertain.

As announced on 25 January 2024, our Board proposes that the Annual General Meeting authorizes the Board to resolve on the distribution of an aggregate maximum of EUR 0.13 per share as dividend from the retained earnings and/or as assets from the reserve for invested unrestricted equity in respect of financial year 2023. Furthermore, the Board initiated a share buyback program under the authorization granted by the Annual General Meetings to repurchase shares. The program targets to return up to EUR 600 million of cash to shareholders in tranches over a period of two years, subject to continued authorization by the Annual General Meeting. The first phase of the share buyback program is expected to begin in the first quarter of 2024. Our Annual General Meeting 2023, held on 4 April 2023, authorized the Board to resolve on the distribution of an aggregate maximum of EUR 0.12 per share as dividend from the retained earnings and/or as assets from the reserve for invested unrestricted equity in respect of the financial year 2022. Furthermore, in 2022, our Board initiated a share buyback program, under the authorizations granted by Nokia’s Annual General Meetings, to return up to EUR 600 million of cash to shareholders in tranches over a period of two years. The first phase of the share buyback program with a maximum aggregate purchase price of EUR 300 million started on 14 February 2022 and ended on 11 November 2022. The second EUR 300 million phase of the share buyback program started on 2 January 2023 and it ended on 10 November 2023. We cannot assure that we will distribute dividends and/or capital repayments on the shares issued by us, nor is there any assurance as to the amount of any dividend and/or repayment of capital we may pay, including but not limited to situations where we make commitments to increase our dividends. Neither can we guarantee that we finalize the announced share buyback program. The payment and the amount of any dividend and/or repayment of capital as well as additional share buyback programs is subject to the discretion of the general meeting of our shareholders and our Board, and will depend on available cash balances, expected cash flow generation, anticipated cash needs, retained earnings, the results of our operations and our financial condition and terms of outstanding indebtedness, as well as other relevant factors such as restrictions, prohibitions or limitations imposed by applicable laws. Further, even if any conditions or factors covering the issuance or distribution of dividends are met, the Board or the shareholders have in the past decided, and may going forward decide, not to issue or distribute dividends or initiate additional buyback programs.

Our share and/or ADS price may be volatile and subject to fluctuations.

Our share and/or ADS price may be volatile and could be subject to fluctuations in response to various factors, some of which are beyond our control. In addition to the factors described in this "Risk Factors" section, other factors that could cause fluctuations in our share price include, among others, high volatility in the securities markets generally and volatility in telecommunications and technology companies' securities in particular, trading volumes, speculation in the media or retail or institutional investment communities regarding the Company and our prospects, future developments in our industry and competitors, our financial results and the expectations of financial analysts, as well as the timing or content of any public communications, including reports of operating results, by us or our competitors. Further, factors in the public trading market for our stock may produce price movements that may or may not comport with macro, industry or company-specific fundamentals, including, without limitation, the sentiment of retail investors (including as may be expressed on financial trading and other social media sites and

Significant subsequent events

After 31 December 2023, no significant subsequent events have taken place.

General facts on Nokia

American Depositary Shares

Fees and charges

ADS holders may have to pay the following service fees to the Depositary:

Service	Fees, USD
Issuance of ADSs	Up to 5 cents per ADS(1)
Cancellation of ADSs	Up to 5 cents per ADS(1)
Distribution of cash dividends or other cash distributions	Up to 2 cents per ADS
Distribution of ADSs pursuant to (i) stock dividends, free stock distributions or (ii) exercises of rights to purchase additional ADSs	Up to 5 cents per ADS
Distribution of securities other than ADSs or rights to purchase additional ADSs	Up to 5 cents per ADS(1)
ADS transfer fee	1.50 cents per transfer(1)

(1)These fees are typically paid to the Depositary by the brokers on behalf of their clients receiving the newly issued ADSs from the Depositary and by the brokers on behalf of their clients delivering the ADSs to the Depositary for cancellation. The brokers in turn charge these transaction fees to their clients.

Additionally, ADS holders are responsible for certain fees and expenses incurred by the Depositary on their behalf and certain governmental charges such as taxes and registration fees, transmission and delivery expenses, conversion of foreign currency and fees relating to compliance with exchange control regulations. The fees and charges may vary over time.

In the event of refusal to pay the depositary fees, the Depositary may, under the terms of the deposit agreement, refuse the requested service until payment is received or may set off the amount of the depositary fees from any distribution to be made to the ADS holder.

Payments

In 2023, our Depositary made the following payments on our behalf in relation to our ADS program:

Category	Payment, USD
Settlement infrastructure fees (including the Depositary Trust Company fees)	1 047 044.65
Proxy process expenses (including printing, postage and distribution)	1 853 812.02
Legal fees	—
NYSE listing fees	500 000.00
Investor relations expenses	9 095.92
Total	**3 409 952.59**

Additionally for 2023, our Depositary reimbursed us USD 6 000 000 mainly related to contributions towards our investor relations activities, including investor meetings and conferences and fees of investor relations service vendors, and other miscellaneous expenses related to the listing of our ADSs in the United States.

Controls and procedures

Our management, with the participation of our President and CEO and our Chief Financial Officer, conducted an evaluation pursuant to Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the Exchange Act), of the effectiveness of our disclosure controls and procedures at 31 December 2023. Based on such evaluation, our President and CEO and our Chief Financial Officer have

Attestation report of the registered public accounting firm

Refer to section “Reports of independent registered public accounting firm".

Exchange controls

There are currently no Finnish laws that may affect the import or export of capital, or the remittance of dividends, interest or other payments.

Government regulation

Nokia and its businesses are subject to direct and indirect regulation in each of the countries in which we and our customers do business. As a result, changes in or uncertainties related to various types of regulations applicable to current or new technologies, intellectual property, products, services, company operations and business environment (e.g. labor laws, taxation) could affect our business adversely. Moreover, the implementation of technological or legal requirements could impact our products and services, technology and patent licensing activities, manufacturing and distribution processes, and could affect the timing of product and services introductions and the cost of our production, products and services, as well as their commercial success. Also, our business is subject to the impacts of changes in economic and trade policies. Export control, tariffs or other fees or levies imposed on our products and services and environmental, product safety and security and other regulations that adversely affect the export, import, pricing or costs of our products and services, as well as export prohibitions (sanctions) enacted by the EU, the United States or other countries or regions could adversely affect our net sales and results of operations. Further, potential governmental intervention in supply chain (e.g. prohibiting imports from certain geographies or imposing certain criteria on selection of suppliers) may impact Nokia's operations.

For example, depending on the geography, our products and services are subject to a wide range of government regulations that might have a direct impact on our business, including, but not limited to, regulation related to product certification, standards, spectrum management, provision of telecommunications services, privacy and data protection, competition and sustainability. The EU-level or local member state regulation has a direct impact on many areas of our business, markets and customers within the EU. The European regulation influences, for example, conditions for innovation for telecommunications infrastructure and internet and related services, as well as technology and patent licensing, investment in fixed and wireless broadband communication infrastructure and operation of global data flows. Additionally, with respect to certain developing market countries, the business environment we operate in can be affected by localization requirements.

We proactively exchange views and address the impact of any planned changes to the regulatory environment on our business activities with state agencies, regulators and other decision-makers either through our government relations representatives in various geographies and through our experts, or indirectly through memberships in industry associations.

Sales in United States-sanctioned countries

General

We are a global company and have sales in most countries of the world. Nokia is committed to the highest standards of ethical conduct, and adheres to all applicable national and international trade-related laws. As a leading international telecommunications company with global operations, Nokia has a presence also in countries subject to international sanctions. All operations of Nokia, and in particular any operations undertaken in countries targeted by sanctions, are conducted in accordance with our comprehensive and robust internal compliance program to ensure that they are in full compliance with all applicable laws and regulations. In addition, we continuously monitor international developments and assess

Nokia does not normally allocate net profit on a country-by-country or activity-by-activity basis, other than as set forth in Nokia's consolidated financial statements prepared in accordance with IFRS. Therefore, for this exercise Nokia will reflect its sales margin in lieu of the net profit/loss. In 2023, we recognized net sales of approximately EUR 1 million from business with MTN Irancell. Sales margin from this customer amounted to 99%.

Although we evaluate our business activities on an ongoing basis, we intend to continue not accepting any new business in Iran in 2024 and intend to only complete existing contractual obligations in Iran in compliance with applicable economic sanctions and other trade-related laws.

Taxation

General

The statements of the United States and Finnish tax laws set out below are based on the laws in force as of the date of this report and may be subject to any changes in US or Finnish law, and in any double taxation convention or treaty between the United States and Finland, occurring after that date, possibly with retroactive effect.

For purposes of this discussion, "US Holders" are beneficial owners of ADSs that: (i) hold the ADSs as capital assets; (ii) are citizens or residents of the United States, corporations created in or organized under US law, estates whose income is subject to US federal income tax, or trusts that elect to be treated as a US person or are both subject to the primary supervision of a US court and controlled by a US person; and (iii) in each case, are considered residents of the United States for purposes of the current income tax convention between the United States and Finland, referred to as the "Treaty", and the limitation on benefits provisions therein. Special rules apply to US Holders that are also residents of Finland and to citizens or residents of the United States that do not maintain a substantial presence, permanent home or habitual abode in the United States. For purposes of this discussion, it is assumed that the Depositary and its custodian will perform all actions as required by the deposit agreement with the Depositary and other related agreements between the Depositary and Nokia.

If a partnership holds ADSs (including for this purpose any entity or arrangement treated as a partnership for US federal income tax purposes), the tax treatment of a partner will depend upon the status of the partner and activities of the partnership. If a US Holder is a partnership or a partner in a partnership that holds ADSs, the holder is urged to consult its own tax adviser regarding the specific tax consequences of owning and disposing of its ADSs.

Because this summary is not exhaustive of all possible tax considerations – such as situations involving financial institutions, banks, tax-exempt entities, pension funds, US expatriates, real estate investment trusts, persons that are dealers in securities, persons who own (directly, indirectly or by attribution) 10% or more of the share capital or voting stock of Nokia, persons who acquired their ADSs pursuant to the exercise of employee stock options or otherwise as compensation, or US Holders whose functional currency is not the US dollar, who may be subject to special rules that are not discussed herein – holders of shares or ADSs that are US Holders are advised to satisfy themselves as to the overall US federal, state and local tax consequences, as well as to the overall Finnish and other applicable non-US tax consequences, of their ownership of ADSs and the underlying shares by consulting their own tax advisers. This summary does not discuss the treatment of ADSs that are held in connection with a permanent establishment or fixed base in Finland, and it does not address the US Medicare tax on certain investment income.

For the purposes of both the Treaty and the US Internal Revenue Code of 1986, as amended, referred to as the "Code", US Holders of ADSs will be treated as the owners of the underlying shares that are represented by those ADSs. Accordingly, the following discussion, except where otherwise

Provided that certain holding period and other requirements are met, individuals and certain other non-corporate US Holders are eligible for reduced rates of US federal income tax at a maximum rate of 20% in respect of "qualified dividend income". Dividends that Nokia pays with respect to its shares and ADSs generally will be qualified dividend income if certain holding periods are met and Nokia was neither a passive foreign investment company (PFIC) in the taxable year prior to the year in which the dividend was paid nor in the taxable year in which the dividend is paid. Nokia currently believes that dividends it pays with respect to its shares and ADSs will constitute qualified dividend income for US federal income tax purposes; however, this is a factual matter and is subject to change. Nokia anticipates that its dividends will be reported as qualified dividends on Forms 1099-DIV delivered to US Holders. US Holders of shares or ADSs are urged to consult their own tax advisers regarding the availability to them of the reduced dividend tax rate in light of their own particular situation and the computations of their foreign tax credit limitation with respect to any qualified dividends paid to them, as applicable. We believe we should not be classified as a PFIC for US federal income tax purposes for the taxable year ended 31 December 2023 and we do not expect to become a PFIC in the foreseeable future. US Holders are advised, however, that this conclusion is a factual determination that must be made annually and thus may be subject to change. If we were to be classified as a PFIC, the tax on distributions on our shares or ADSs and on any gains realized upon the disposition of our shares or ADSs generally would be less favorable than as described herein. Dividends paid by a PFIC are not "qualified dividend income" and are not eligible for reduced rates of taxation. Additionally, US persons who are shareholders in a PFIC generally will be required to file an annual report disclosing the ownership of such shares and certain other information. US Holders should consult their own tax advisers regarding the application of the PFIC rules, including the related reporting requirements, to their ownership of our shares or ADSs.

Finnish withholding taxes on cash dividends

Under the Finnish Income Tax Act and Act on Taxation of Non-residents' Income, non-residents of Finland are generally subject to a withholding tax at a rate of 30% on dividends paid by a Finnish resident company. Further, under the Finnish Prepayment Act, 50% preliminary tax must be withheld on dividends paid in certain situations. However, pursuant to the Treaty, dividends paid to US Holders are generally subject to Finnish withholding tax at reduced rates. Under the Finnish Income Tax Act and tax court practice, the distribution of funds from reserves for invested unrestricted equity by a listed company such as Nokia is taxed as a distribution of a dividend. As of 1 January 2021, nominee registered shares are generally subject to a withholding tax at a rate of 35% on dividends paid by Nokia. This withholding tax regime is based on OECD's TRACE (Treaty Relief and Compliance Enhancement) model. Under the rules, the 35% withholding tax will generally be applied on dividend distributions on nominee registered shares by listed companies such as Nokia, unless custodians fulfill certain strict requirements and are willing to take over certain responsibilities (e.g. registration with the Finnish Tax Administration (so-called authorized intermediary), identification of the beneficial owner of the dividend and collecting and submitting detailed recipient information to the Finnish Tax Administration using specific filing procedures). Furthermore, application of reduced withholding tax rates at source require that the custodian and dividend distributor are willing to assume liability of incorrectly applied withholding tax. If the custodian only registers with the Finnish Tax Administration and submits (or undertakes to submit) the detailed recipient details to the Finnish Tax Administration, the 30% withholding tax rate can be applied, instead of 35%. Any tax withheld in excess can be reclaimed after the calendar year of the dividend payment by submitting a refund

Finnish transfer tax

The transfer of our shares and ADSs for cash through a broker or other appropriate intermediary is generally not subject to Finnish transfer tax. Non-brokered transfers will generally be exempted from the transfer tax if the transferee has been approved as a trading party in the market where the transfer is executed, or other conditions are met. Transfers of ADSs on the New York Stock Exchange are exempt. Where the transfer does not fulfill the above requirements, and either the buyer or the seller is a Finnish resident or a Finnish branch office of a specified foreign financial service provider, the buyer is liable to pay transfer tax of 1.6% of the transaction price where the resulting tax is at least EUR 10. Parliament has approved a change in the transfer tax rate from 1.6% to 1.5% entering into force as of 1 January 2024 (no change to EUR 10 de minimis threshold). The new reduced tax rate will be applied retroactively to transfers that have been bindingly agreed upon on or after 12 October 2023. If transfer tax on such transfers is paid during 2023, the old 1.6% tax rate should still be used. The Finnish Tax Administration will in such case refund the excess tax once the new rules have entered into force. Selling shareholders should consult their tax advisers regarding the specific tax considerations of a sale of our shares or ADSs.

Finnish inheritance and gift taxes

A transfer of an underlying share by gift or by reason of the death of a US Holder and the transfer of an ADS are not subject to Finnish gift or inheritance tax provided that none of the deceased person, the donor, the beneficiary of the deceased person or the recipient of the gift is resident in Finland.

Non-residents of the United States

Beneficial owners of ADSs that are not US Holders will not be subject to US federal income tax on dividends received with respect to ADSs unless such dividend income is effectively connected with the conduct of a trade or business within the United States. Similarly, non-US Holders generally will not be subject to US federal income tax on any gain realized on the sale or other disposition of ADSs, unless (a) the gain is effectively connected with the conduct of a trade or business in the United States or (b) in the case of an individual, that individual is present in the United States for 183 days or more in the taxable year of the disposition and other conditions are met.

The United States information reporting and backup withholding

Dividend payments with respect to shares or ADSs and proceeds from the sale or other disposition of shares or ADSs may be subject to information reporting to the Internal Revenue Service and possible US backup withholding. Backup withholding will not apply to a holder if the holder furnishes a correct taxpayer identification number or certificate of foreign status and makes any other required certification in connection therewith, or if it is a recipient otherwise exempt from backup withholding (such as a corporation). Any US persons required to establish their exempt status generally must furnish a duly completed IRS Form W-9 (Request for Taxpayer Identification Number and Certification). Non-US holders generally are not subject to US information reporting or backup withholding. However, such holders may be required to provide certification of non-US status (generally on IRS Form W-8BEN for individuals and Form W-8BEN-E for corporations) in connection with payments received in the United States or through certain US-related financial intermediaries. Backup withholding is not an additional tax. Amounts withheld as backup withholding may be credited against a holder's US federal income tax liability, and the holder may obtain a refund of any excess amounts withheld under the backup withholding rules by timely filing the appropriate claim for refund with the Internal Revenue Service and furnishing the proper required information.

Key ratios

Earnings per share (basic)

Profit/(loss) attributable to equity holders of the parent
Weighted average number of shares outstanding during the year

Earnings per share (diluted)

Profit/(loss) attributable to equity holders of the parent adjusted for the effect of dilution
Adjusted weighted average number of shares during the year

P/E ratio

Closing share price at 31 December
Earnings per share (basic) for continuing operations

Payout ratio
Proposed dividend per share
Earnings per share (basic) for continuing operations
Dividend yield %
Proposed dividend per share
Closing share price at 31 December
Shareholders' equity per share
Capital and reserves attributable to equity holders of the parent
Number of shares at 31 December – number of treasury shares at 31 December
Market capitalization
(Number of shares at 31 December – number of treasury shares at 31 December) x closing share price at 31 December
Share turnover %
Number of shares traded during the year
Average number of shares during the year

Alternative performance measures

Certain financial measures presented in this report are not measures of financial performance, financial position or cash flows defined in IFRS. As these measures are not defined in IFRS, they may not be directly comparable with financial measures used by other companies, including those in the same industry. The primary rationale for presenting these measures is that the management uses these measures in assessing the financial performance of Nokia and believes that these measures provide meaningful supplemental information on the underlying business performance of Nokia. These financial measures should not be considered in isolation from, or as a substitute for, financial information presented in compliance with IFRS.

Beginning with its Annual Report 2023 Nokia changed how it defines its Free cash flow measure to better align it with common practice and Non-GAAP reporting guidelines. Previously Nokia defined Free cash flow as Net cash flows from operating activities – purchases of property, plant and equipment and intangible assets (capital expenditures) + proceeds from sale of property, plant and equipment and intangible assets – purchase of non-current financial investments + proceeds from sale of non-current financial investments. The new definition is Net cash flows from operating activities – purchases of property, plant and equipment and intangible assets (capital expenditures). The comparative amounts for Free cash flow presented in this report have been revised accordingly.

Return on capital employed %

Definition
Return on capital employed is defined as Profit before tax + Interest expense on interest-bearing liabilities / Average capital and reserves attributable to equity holders of the parent + average non-controlling interests + average interest-bearing liabilities.
Purpose
Return on capital employed indicates how efficiently Nokia uses its capital to generate profits.
Composition of return on capital employed %:

EURm	2023	2022	2021
Profit before tax	1 499	2 184	1 926
Interest expense on interest-bearing liabilities	201	103	113
Total	**1 700**	**2 287**	**2 039**
Average capital and reserves attributable to equity holders of the parent(1)	20 935	19 347	14 913
Average non-controlling interests(1)	92	98	91
Average interest-bearing liabilities(1)	4 334	4 565	5 115
Total capital employed	**25 361**	**24 010**	**20 119**
Return on capital employed %	**6.7%**	**9.5%**	**10.1%**

(1)Calculated as the average of opening and closing balance for the year as presented in the consolidated statement of financial position. Refer to the consolidated financial statements.

Return on shareholders' equity %

Definition
Return on shareholders' equity is defined as Profit/(loss) for the year attributable to equity holders of the parent / Average capital and reserves attributable to equity holders of the parent.
Purpose
Return on shareholders' equity indicates how efficiently Nokia uses the capital invested by its shareholders to generate profits.
Composition of return on shareholders' equity %:

EURm	2023	2022	2021
Profit/(loss) for the year attributable to equity holders of the parent	665	4 250	1 623
Average capital and reserves attributable to equity holders of the parent(1)	20 935	19 347	14 913
Return on shareholders' equity %	**3.2%**	**22.0%**	**10.9%**

(1)Calculated as the average of opening and closing balance for the year as presented in the consolidated statement of financial position. Refer to the consolidated financial statements.

Equity ratio %

Definition
Equity ratio % is defined as Total capital and reserves attributable to equity holders of the parent + non-controlling interests / Total assets.
Purpose
Equity ratio indicates the proportion of assets financed by the capital provided by the equity holders of the parent to the total assets of Nokia.
Composition of equity ratio %:

EURm	2023	2022	2021

Total cash and interest-bearing financial investments

Definition
Total cash and interest-bearing financial investments consist of cash and cash equivalents, current interest-bearing financial investments and non-current interest-bearing financial investments.
Purpose
Total cash and interest-bearing financial investments is used to indicate funds available to Nokia to run its current and invest in future business activities as well as provide return for security holders.
Composition of total cash and interest-bearing financial investments:

EURm	2023	2022	2021
Cash and cash equivalents	6 234	5 467	6 691
Current interest-bearing financial investments	1 565	3 080	2 577
Non-current interest-bearing financial investments	715	697	—
Total cash and interest-bearing financial investments	**8 514**	**9 244**	**9 268**

Net cash and interest-bearing financial investments

Definition

Net cash and interest-bearing financial investments equals total cash and interest-bearing financial investments less long-term and short-term interest-bearing liabilities.

Purpose

Net cash and interest-bearing financial investments is used to indicate Nokia's liquidity position after cash required to settle the interest-bearing liabilities.

Composition of net cash and interest-bearing financial investments:

EURm	2023	2022	2021
Total cash and interest-bearing financial investments			
Cash and cash equivalents	6 234	5 467	6 691
Current interest-bearing financial investments	1 565	3 080	2 577
Non-current interest-bearing financial investments	715	697	—
Interest-bearing liabilities			
Long-term interest-bearing liabilities	(3 637)	(4 249)	(4 537)
Short-term interest-bearing liabilities	(554)	(228)	(116)
Net cash and interest-bearing financial investments	**4 323**	**4 767**	**4 615**

Net debt to equity (gearing) %

Definition

Net debt to equity (gearing) % is defined as Interest-bearing liabilities less Total cash and interest-bearing financial investments / (Total capital and reserves attributable to the equity holders of the parent + Non-controlling interests).

Purpose

Net debt to equity ratio presents the relative proportion of shareholders' equity and interest-bearing liabilities used to finance Nokia's assets and indicates the leverage of Nokia's business.

Composition of net debt to equity (gearing) %:

EURm	2023	2022	2021
Interest-bearing liabilities			
Long-term interest-bearing liabilities	3 637	4 249	4 537
Short-term interest-bearing liabilities	554	228	116
Total cash and interest-bearing financial investments			
Cash and cash equivalents	(6 234)	(5 467)	(6 691)
Current interest-bearing financial investments	(1 565)	(3 080)	(2 577)
Non-current interest-bearing financial investments	(715)	(697)	—
Net debt	**(4 323)**	**(4 767)**	**(4 615)**
Total capital and reserves attributable to equity holders	20 537	21 333	17 360

Composition of free cash flow:

EURm	2023	2022	2021
Net cash flows from operating activities	1 317	1 474	2 625
Purchase of property, plant and equipment and intangible assets (capital expenditures)	(652)	(601)	(560)
Free cash flow	**665**	**873**	**2 065**

Capital expenditure

Definition

Purchases of property, plant and equipment and intangible assets (excluding assets acquired under business combinations).

Purpose

Capital expenditure is used to describe investments in future profit-generating activities.

Composition of capital expenditure:

EURm	2023	2022	2021
Purchase of property, plant and equipment and intangible assets	(652)	(601)	(560)
Capital expenditure	**(652)**	**(601)**	**(560)**

Comparable operating profit

Definition

Comparable operating profit excludes intangible asset amortization and other purchase price fair value adjustments, goodwill impairments, restructuring-related charges and certain other items affecting comparability.

Purpose

We believe that our comparable operating profit provides meaningful supplemental information to both management and investors regarding Nokia's underlying business performance by excluding certain items of income and expenses that may not be indicative of Nokia's business operating results. Comparable operating profit is used also in determining management remuneration.

Composition of comparable operating profit:

EURm	2023	2022	2021
Operating profit	1 688	2 318	2 158
Restructuring and associated charges	356	177	263
Amortization of acquired intangible assets	352	411	391
Costs associated with country exit	(49)	98	—
Impairment and write-off of assets, net of reversals	25	97	45
Settlement of legal disputes	—	—	(80)
Gain on sale of fixed assets	—	—	(53)
Other	3	8	51
Comparable operating profit	**2 375**	**3 109**	**2 775**

Comparable operating margin %

Definition

Comparable operating margin is defined as Comparable operating profit / Net sales.

Purpose

Comparable operating margin is used as a measure of Nokia's operating profitability as a percentage of net sales excluding intangible asset amortization and other purchase price fair value adjustments, goodwill impairments, restructuring-related charges and certain other items affecting comparability.

As with comparable operating profit, we believe that our comparable operating margin provides meaningful supplemental information to both management and investors regarding Nokia's underlying business performance by excluding certain items of income and expenses that may not be indicative of Nokia's business operating results.

Composition of comparable operating margin:

EURm	2023	2022	2021
Comparable operating profit	2 375	3 109	2 775
Net sales	22 258	24 911	22 202
Comparable operating margin %	**10.7%**	**12.5%**	**12.5%**

EURm	Note	2023	2022	2021
Net sales	2.1, 2.2	**22 258**	**24 911**	**22 202**
Cost of sales	2.3	(13 571)	(14 689)	(13 368)
Gross profit		**8 687**	**10 222**	**8 834**
Research and development expenses	2.3	(4 327)	(4 550)	(4 214)
Selling, general and administrative expenses	2.3	(2 929)	(3 013)	(2 792)
Other operating income	2.3	166	98	443
Other operating expenses	2.3	91	(439)	(113)
Operating profit		**1 688**	**2 318**	**2 158**
Share of results of associates and joint ventures	6.4	(39)	(26)	9
Financial income(1)	2.4	425	178	69
Financial expenses(1)	2.4	(575)	(286)	(310)
Profit before tax		**1 499**	**2 184**	**1 926**
Income tax (expense)/benefit	2.5	(825)	2 026	(272)
Profit from continuing operations		**674**	**4 210**	**1 654**
Profit/(loss) from discontinued operations		5	49	(9)
Profit for the year		**679**	**4 259**	**1 645**
Attributable to:				
Equity holders of the parent		665	4 250	1 623
Non-controlling interests		14	9	22

Earnings per share attributable to equity holders of the parent	2.6	EUR	EUR	EUR
Basic				
Profit from continuing operations		0.12	0.75	0.29
Profit for the year		0.12	0.76	0.29
Diluted				
Profit from continuing operations		0.12	0.74	0.29
Profit for the year		0.12	0.75	0.29

(1)In 2023, Nokia changed the presentation of net interest income on defined benefit plans within financial income and expenses. The comparative amounts for 2022 and 2021 have been recast accordingly. Refer to Note 2.4. Financial income and expenses for more information.

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

Consolidated income statement

For the year ended 31 December

EURm	Note	2023	2022	2021
Profit for the year		**679**	**4 259**	**1 645**
Items that will not be reclassified to profit or loss				
Remeasurements of defined benefit plans		(343)	(424)	3 040
Income tax related to items that will not be reclassified to profit or loss	2.5	61	77	(755)
Total of items that will not be reclassified to profit or loss		**(282)**	**(347)**	**2 285**
Items that may be reclassified to profit or loss				
Translation differences				
Exchange differences on translating foreign operations		(554)	696	1 160
Transfer to income statement		19	14	(7)
Net investment hedges				
Net fair value gains/(losses)		135	(127)	(249)
Cash flow and other hedges				
Net fair value losses		(24)	(15)	(10)
Transfer to income statement		(37)	98	10
Financial assets at fair value through other comprehensive income				
Net fair value losses		(110)	(264)	(25)
Transfer to income statement		120	218	32
Other decrease, net		(4)	(3)	—
Income tax related to items that may be reclassified to profit or loss	2.5	(10)	(21)	2
Total of items that may be reclassified to profit or loss		**(465**	**596**	**913**

EURm	Note	2023	2022
ASSETS			
Non-current assets			
Goodwill	4.1	5 504	5 667
Other intangible assets	4.1	1 086	1 263
Property, plant and equipment	4.2	1 951	2 015
Right-of-use assets	4.3	906	929
Investments in associated companies and joint ventures	6.4	88	199
Non-current interest-bearing financial investments	5.2, 5.4	715	697
Other non-current financial assets	5.2, 5.4	1 100	1 080
Defined benefit pension assets	3.4	6 258	6 754
Deferred tax assets	2.5	3 873	3 834
Other non-current receivables	4.6	213	239
Total non-current assets		**21 694**	**22 677**
Current assets			
Inventories	4.4	2 719	3 265
Trade receivables	4.5, 5.2, 5.4	4 921	5 549
Contract assets	4.5	1 136	1 203
Current income tax assets	2.5	307	153
Other current receivables	4.6	764	934
Current interest-bearing financial investments	5.2, 5.4	1 565	3 080
Other current financial and firm commitment assets	5.2, 5.3, 5.4	441	615
Cash and cash equivalents	5.2, 5.4	6 234	5 467
Total current assets		**18 087**	**20 266**
Assets held for sale	6.4	79	—
Total assets		**39 860**	**42 943**

EURm	Note	2023	2022	2021
Profit for the year		679	4 259	1 645
Adjustments, total(1)		2 559	(446)	1 713
Change in net working capital(2)		(1 282)	(1 843)	(268)
Cash flows from operations		1 956	1 970	3 090
Interest received		178	65	41
Interest paid	4.3, 5.2	(241)	(180)	(192)
Income taxes paid, net		(576)	(381)	(314)
Net cash flows from operating activities		**1 317**	**1 474**	**2 625**
Purchase of property, plant and equipment and intangible assets		(652)	(601)	(560)
Proceeds from sale of property, plant and equipment and intangible assets		189	33	103
Acquisition of businesses, net of cash acquired		(19)	(20)	(33)
Proceeds from disposal of businesses, net of cash disposed		17	—	—
Purchase of interest-bearing financial investments		(1 855)	(3 595)	(1 845)
Proceeds from interest-bearing financial investments		3 382	2 397	398
Purchase of other non-current financial assets		(83)	(115)	(77)
Proceeds from other non-current financial assets		34	49	277
Other		30	(28)	(58)
Net cash flows from/(used in) investing activities		**1 043**	**(1 880)**	**(1 795)**
Acquisition of treasury shares	5.1	(300)	(300)	—
Proceeds from long-term borrowings	5.4	496	8	17
Repayment of long-term borrowings	5.4	(798)	(2)	(927)
(Repayment of)/proceeds from short-term borrowings	5.4	(40)	27	(67)
Payment of principal portion of lease liabilities	4.3, 5.4	(239)	(217)	(226)
Dividends paid	5.1	(621)	(353)	(9)
Net cash flows used in financing activities		**(1 502)**	**(837)**	**(1 212)**
Translation differences		(91)	19	133
Net increase/(decrease) in cash and cash equivalents		**767**	**(1 224)**	**(249)**
Cash and cash equivalents at 1 January		5 467	6 691	6 940
Cash and cash equivalents at 31 December		**6 234**	**5 467**	**6 691**

The consolidated statement of cash flows combines cash flows from both continuing and discontinued operations.

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

(1) Adjustments

EURm	2023	2022	2021
Depreciation and amortization	1 087	1 140	1 095
Share-based payments	202	149	108
Impairment charges	25	152	40
Restructuring charges	316	125	183
Loss/(gain) from other non-current financial assets	56	(27)	(188)
Gain on sale of property, plant and equipment	(143)	(35)	(59)
Financial income and expenses	148	28	240
Income tax expense/(benefit)	825	(2 030)	273
Other adjustments, net	43	52	21

EURm	Note	Share capital	Share premium	Treasury shares	Translation differences	Fair value and other reserves	Reserve for invested unrestricted equity	Retained earnings/ (Accumulated deficit)	Total shareholders' equity	Non-controlling interests	Total equity
1 January 2021		**246**	**443**	**(352)**	**(1 295)**	**1 910**	**15 656**	**(4 143)**	**12 465**	**80**	**12 545**
Profit for the year								1 623	1 623	22	1 645
Other comprehensive income	5.1				899	2 309		(17)	3 191	7	3 198
Total comprehensive income for the year		**—**	**—**	**—**	**899**	**2 309**	**—**	**1 606**	**4 814**	**29**	**4 843**
Share-based payments			108						108		108
Settlement of share-based payments			(97)				70		(27)		(27)
Dividends	5.1								—	(7)	(7)
Total transactions with owners		**—**	**11**	**—**	**—**	**—**	**70**	**—**	**81**	**(7)**	**74**
31 December 2021		**246**	**454**	**(352)**	**(396)**	**4 219**	**15 726**	**(2 537)**	**17 360**	**102**	**17 462**
Profit for the year								4 250	4 250	9	4 259
Other comprehensive income	5.1				565	(314)		(1)	250	(1)	249
Total comprehensive income for the year		**—**	**—**	**—**	**565**	**(314)**	**—**	**4 249**	**4 500**	**8**	**4 508**
Share-based payments			149						149		149
Settlement of share-based payments			(100)				73		(27)		(27)
Acquisition of treasury shares(1)	5.1			(300)			(12)		(312)		(312)
Cancellation of treasury shares(1)	5.1			300			(300)		—		—
Dividends	5.1							(337)	(337)	(17)	(354)
Total transactions with owners		**—**	**49**	**—**	**—**	**—**	**(239)**	**(337)**	**(527)**	**(17)**	**(544)**
31 December 2022		**246**	**503**	**(352)**	**169**	**3 905**	**15 487**	**1 375**	**21 333**	**93**	**21 426**
Profit for the year								665	665	14	679
Other comprehensive loss	5.1				(418)	(300)		(25)	(743)	(4)	(747)
Total comprehensive income for the year		**—**	**—**	**—**	**(418)**	**(300)**	**—**	**640**	**(78)**	**10**	**(68)**
Share-based payments			202						202		202
Settlement of share-based payments			(77)				59		(18)		(18)
Acquisition of treasury shares(1)	5.1			(303)			12		(291)		(291)
Cancellation of treasury shares(1)	5.1			303			(303)		—		—
Disposal of subsidiaries									—	(2)	(2)
Dividends	5.1							(611)	(611)	(10)	(621)
Total transactions with owners		**—**	**125**	**—**	**—**	**—**	**(232)**	**(611)**	**(718)**	**(12)**	**(730)**
31 December 2023		**246**	**628**	**(352)**	**(249)**	**3 605**	**15 255**	**1 404**	**20 537**	**91**	**20 628**

(1)Treasury shares have been acquired as part of the share buyback program announced on 3 February 2022 using the reserve for invested unrestricted equity. The shares repurchased in the first phase of the program between 14 February and 11 November 2022 were cancelled on 8 December 2022. The shares repurchased in the second phase of the program between 2 January and 10 November 2023 were cancelled on 30 November 2023. Refer to Note 5.1. Equity for more information.

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

Consolidated statement of changes in shareholders' equity

Non-current assets (or disposal groups) held for sale and discontinued operations

Non-current assets or disposal groups are classified as assets held for sale if their carrying amounts will be recovered principally through a sale transaction rather than through continuing use. Non-current assets classified as held for sale, or included in a disposal group classified as held for sale, are not depreciated or amortized.

Discontinued operation is reported when a component of Nokia, comprising operations and cash flows that can be clearly distinguished both operationally and for financial reporting purposes from the rest of Nokia, has been disposed of or is classified as held for sale, and that component represents a major line of business or geographical area of operations or is part of a single coordinated plan to dispose of a separate major line of business or geographical area of operations. Profit or loss from discontinued operations is reported separately from income and expenses from continuing operations in the consolidated income statement, with prior periods presented on a comparative basis. Intra-group revenues and expenses between continuing and discontinued operations are eliminated. Discontinued operations presented in these consolidated financial statements comprise the financial results related to the HERE digital mapping and location services business and the Devices & Services business sold in 2015 and 2014, respectively.

Foreign currency translation

Functional and presentation currency

The consolidated financial statements are presented in euro, the functional and presentation currency of the Parent Company. The financial statements of all Group companies are measured using the functional currency, which is the currency of the primary economic environment in which the entity operates.

Transactions in foreign currencies

Transactions in foreign currencies are recorded at exchange rates prevailing at the date of the transactions. For practical reasons, a rate that approximates the actual rate at the date of the transaction is often used. Monetary assets and liabilities denominated in foreign currency are translated at the exchange rates prevailing at the end of the reporting period. Foreign exchange gains and losses arising from monetary assets and liabilities as well as fair value changes of related hedging instruments are recognized in financial income and expenses. Unrealized foreign exchange gains and losses related to non-monetary non-current financial investments are included in the fair value measurement of these investments and recognized in other operating income and expenses.

Foreign Group companies

On consolidation, the assets and liabilities of foreign operations whose functional currency is other than euro are translated into euro at the exchange rates prevailing at the end of the reporting period. The income and expenses of these foreign operations are translated into euro at the average exchange rates for the reporting period. The exchange differences arising from translation for consolidation are recognized as translation differences in other comprehensive income. On disposal of a foreign operation the cumulative amount of translation differences relating to that foreign operation is reclassified to profit or loss.

1.3. Use of estimates and critical accounting judgments

The preparation of financial statements requires use of management judgment in selecting and applying accounting policies as well as making estimates and assumptions about the future. These judgments, estimates and assumptions may have a significant effect on the amounts recognized in the financial statements.

The estimates and assumptions used in determining the carrying amounts of assets and liabilities are based on historical experience, expected outcomes and various other

1.4. New and amended standards and interpretations

On 1 January 2023, Nokia adopted the following amendments to the accounting standards issued by the IASB and endorsed by the EU:

- IFRS 17 Insurance Contracts (including the June 2020 and

December 2021 Amendments to IFRS 17);

- Amendments to IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors: Definition of Accounting Estimates;
- Amendments to IAS 1 Presentation of Financial Statements and IFRS Practice Statement 2 Making Materiality Judgements: Disclosure of Accounting Policies;
- Amendments to IAS 12 Income Taxes: Deferred Tax related to Assets and Liabilities arising from a Single Transaction; and
- Amendments to IAS 12 Income Taxes: International Tax Reform—Pillar Two Model Rules.

The amendments had no material impact on the measurement, recognition or presentation of any items in Nokia's consolidated financial statements for 2023. The amendments affecting the disclosures are explained below.

The amendments to IAS 1 and IFRS Practice Statement 2 related to disclosure of accounting policies aim to help entities provide accounting policies disclosures that are more useful by replacing the requirement to disclose 'significant' accounting policies with a requirement to disclose 'material' accounting policies and adding guidance to help entities determine when accounting policies information is material and, therefore, needs to be disclosed. These amendments are reflected in the accounting policies disclosures in Nokia's consolidated financial statements for 2023.

The amendments to IAS 12 related to Pillar Two Model Rules have been introduced in response to the OECD's BEPS Pillar Two rules and include a mandatory temporary exception to the recognition and disclosure of deferred taxes arising from the jurisdictional implementation of the Pillar Two model rules, and disclosure requirements for affected entities to help users of the financial statements better understand an entity's exposure to Pillar Two income taxes arising from that legislation, particularly before its effective date. Information on the impact of Pillar Two legislation on Nokia is disclosed in Note 2.5. Income taxes.

Nokia has not early adopted any new or amended standards or interpretations that have been issued but are not yet effective. The new and amended standards and interpretations issued by the IASB that are effective in future periods are not expected to have a material impact on the consolidated financial statements of Nokia when adopted. Nokia intends to adopt these new and amended standards and interpretations, if applicable, when they become effective and are endorsed by the EU.

Nokia allocates the transaction price to each distinct performance obligation on the basis of their standalone selling prices, relative to the overall transaction price. If a standalone selling price is not observable, it is estimated. The transaction price may include a discount or a variable amount of consideration that is generally allocated proportionately to all performance obligations in the contract unless Nokia has observable evidence that the entire discount relates to only one or more, but not all, performance obligations in a contract. The amount of revenue recognized is the amount allocated to the satisfied performance obligation based on the relative standalone selling prices. A performance obligation may be satisfied at a point in time or over time.

As described in Note 4.5. Trade receivables and other customer-related balances, Nokia presents its customer contracts in the statement of financial position as either a contract asset or a contract liability, depending on the relationship between Nokia's performance and the customer's payment for each individual contract.

Sale of products

Nokia manufactures and sells a range of networking equipment, covering the requirements of network operators. Revenue for these products is recognized when control of the products has transferred, the determination of which may require judgment. Typically, for standard equipment sales, control transfers upon delivery. For more complex solutions, control generally transfers upon acceptance.

Revenue disaggregation

Management has determined that Nokia's geographic areas are considered as the primary determinants to depict how the nature, amount, timing and uncertainty of revenue and cash flows are affected by economic factors. Nokia's primary customer base consists of companies that operate on a country-specific or a regional basis. Although Nokia's technology cycle is similar around the world, different countries and regions are inherently in a different stage of that cycle, often influenced by macroeconomic conditions specific to those countries and regions. In addition to Net sales to external customers by region, the chief operating decision-maker, as described in Note 2.2. Segment information, also reviews Net sales by customer type disclosed in this note.

Each reportable segment, as described in Note 2.2. Segment information, consists of customers that operate in all geographic areas. No reportable segment has a specific revenue concentration in any geographic area other than Nokia Technologies, which is included within Europe.

Net sales to external customers by region

Net sales to external customers by region are based on the location of the customer, except for Nokia Technologies IPR and licensing net sales which are allocated to Europe.

EURm	2023	2022	2021
Asia Pacific	2 291	2 648	2 472
Europe	5 873	6 662	6 313
Greater China	1 303	1 581	1 512
India	2 842	1 290	1 035
Latin America	1 046	1 223	983
Middle East & Africa	2 050	1 969	1 771
North America	5 733	8 388	7 187
Submarine Networks	1 120	1 150	929
Total	**22 258**	**24 911**	**22 202**

Net sales by customer type

EURm	2023	2022	2021
Communications service providers	17 652	19 921	17 977
Enterprise	2 282	1 997	1 575
Licensees	1 085	1 595	1 502
Other(1)	1 239	1 398	1 148
Total	**22 258**	**24 911**	**22 202**

(1)Includes net sales of Submarine Networks which operates in a different market, and Radio Frequency Systems (RFS), which is being managed as a separate entity, and certain other items, such as eliminations of inter-segment revenues. Submarine Networks and RFS net sales also include revenue from communications service providers and enterprise customers.

Order backlog

At 31 December 2023, the aggregate amount of the transaction price allocated to partially or wholly unsatisfied performance obligations arising from fixed contractual commitments amounted to EUR 22.0 billion (EUR 19.5 billion in 2022). Management has estimated that these unsatisfied performance obligations will be recognized as revenue as follows:

	2023	2022
Within 1 year	51%	75%
2-3 years	30%	21%
More than 3 years	19%	4%
Total	**100%**	**100%**

The estimated timing of the satisfaction of these performance obligations is subject to change owing to factors beyond Nokia's control such as customer and network demand

2.2. Segment information

Accounting policies

Nokia has four operating and reportable segments for financial reporting purposes: (1) Network Infrastructure, (2) Mobile Networks, (3) Cloud and Network Services and (4) Nokia Technologies. In addition, Nokia provides net sales disclosure for the following business divisions within the Network Infrastructure segment: (i) IP Networks, (ii) Optical Networks, (iii) Fixed Networks and (iv) Submarine Networks.

The President and CEO is the chief operating decision-maker monitoring the operating results of segments for the purpose of assessing performance and making decisions about resource allocation. Key financial performance measures of the segments comprise primarily net sales and segment operating profit.

The evaluation of segment performance and allocation of resources is primarily based on segment operating profit which the management believes is the most relevant measure for this purpose. Segment operating profit excludes intangible asset amortization and other purchase price fair value adjustments, goodwill impairments, restructuring-related charges and certain other items of income and expenses that may not be indicative of the business operating results.

Accounting policies of the segments are the same as those for the Group except for the aforementioned items of income and expenses that are not allocated to the segments. Inter-segment revenues and transfers are accounted for as if the revenues were to third parties, that is, at current market prices.

Segment results

EURm	Network Infrastructure(1)	Mobile Networks	Cloud and Network Services	Nokia Technologies	Group Common and Other	Eliminations and unallocated items(2)	Nokia Group
2023							
Net sales to external customers	8 039	9 791	3 219	1 085	124	—	**22 258**
Net sales to other segments	(2)	6	1	—	6	(11)	**—**
Operating profit/(loss)	**1 054**	**723**	**255**	**734**	**(391)**	**(687)**	**1 688**
Share of results of associated companies and joint ventures	—	(30)	7	12	—	(28)	**(39)**
Financial income and expenses							**(150)**
Profit before tax							**1 499**
Other segment items							
Depreciation and amortization	(235)	(366)	(81)	(39)	(14)	(352)	**(1 087)**
2022							
Net sales to external customers	9 044	10 658	3 350	1 583	276	—	**24 911**
Net sales to other segments	3	13	1	12	19	(48)	**—**
Operating profit/(loss)	**1 102**	**940**	**177**	**1 208**	**(318)**	**(791)**	**2 318**
Share of results of associated companies and joint ventures	—	(11)	6	(8)	—	(13)	**(26)**
Financial income and expenses							**(108)**
Profit before tax							**2 184**
Other segment items							
Depreciation and amortization	(229)	(347)	(91)	(34)	(28)	(411)	**(1 140)**
2021							
Net sales to external customers	7 673	9 711	3 088	1 490	240	—	**22 202**
Net sales to other segments	1	6	1	12	17	(37)	**—**
Operating profit/(loss)	**784**	**765**	**166**	**1 185**	**(125)**	**(617)**	**2 158**
Share of results of associated companies and joint ventures	(1)	6	6	(2)	—	—	**9**
Financial income and expenses							**(241)**
Profit before tax							**1 926**
Other segment items							
Depreciation and amortization	(208)	(338)	(95)	(33)	(30)	(391)	**(1 095)**

(1)Includes IP Networks net sales of EUR 2 606 million (EUR 3 063 million in 2022 and EUR 2 679 million in 2021), Optical Networks net sales of EUR 1 942 million (EUR 1 891 million in 2022 and EUR 1 708 million in 2021), Fixed Networks net sales of EUR 2 369 million (EUR 2 943 million in 2022 and EUR 2 358 million in 2021) and Submarine Networks net sales of EUR 1 120 million (EUR 1 150 million in 2022 and EUR 929 million in 2021).

(2)Unallocated items comprise costs related to intangible asset amortization, restructuring-related charges, impairments and certain other items.

Material reconciling items between total segment operating profit and operating profit for the Group

EURm	2023	2022	2021
Total segment operating profit	**2 375**	**3 109**	**2 775**
Restructuring and associated charges	(356)	(177)	(263)
Amortization of acquired intangible assets	(352)	(411)	(391)
Costs associated with country exit	49	(98)	—
Impairment and write-off of	(35)	(97)	(45)

Information by geographies and customer concentration

Net sales to external customers by country

EURm	2023	2022	2021
Finland	1 192	1 697	1 605
United States	5 373	7 949	6 791
India	2 835	1 283	1 022
France	792	862	847
Great Britain	786	759	650
Other	11 280	12 361	11 287
Total	**22 258**	**24 911**	**22 202**

Net sales to external customers by country are based on the location of the customer, except for Nokia Technologies IPR and licensing net sales which are allocated to Finland.

Major customers

As is typical for our industry, Nokia's net sales are largely driven by multi-year customer agreements with a limited number of significant customers. In 2023, no single customer represented more than 10% of net sales. In 2022, net sales to the largest customer were 10% and in 2021, 11% of net sales to external customers. Net sales to the largest customer were reported by Network Infrastructure, Mobile Networks and Cloud and Network Services, as well as Group Common and Other.

Non-current assets by country

EURm	2023	2022
Finland	1 549	1 365
United States	4 383	5 032
France	2 139	2 180
Other	1 376	1 297
Total	**9 447**	**9 874**

Non-current assets consists of goodwill, other intangible assets, property, plant and equipment and right-of-use assets.

2.3. Operating expenses and other

Other operating income

EURm	2023	2022	2021
Gain on sale of property, plant and equipment including divested business	168	7	66
Subsidies and government grants	—	20	43
(Losses)/gains from venture funds	(56)	27	188
Settlements and resolutions of legal disputes	—	—	90
Other	54	44	56
Total	**166**	**98**	**443**

Other operating expenses

EURm	2023	2022	2021
Expected credit losses on trade receivables	(4)	(107)	16
Impairment of disposal groups	—	(72)	—
Changes in provisions	37	(134)	(77)
Foreign exchange gains/(losses) on hedging forecasted sales and purchases	80	(107)	45
Other	(22)	(19)	(97)
Total	**91**	**(439)**	**(113)**

2.4. Financial income and expenses

Financial income

EURm	2023	2022	2021
Interest income on financial investments	199	69	21
Interest income on financing components of other contracts	21	13	28
Net interest income on defined benefit plans(1)	187	92	26
Other financial income(2)	18	4	(6)
Total	**425**	**178**	**69**

(1)In 2023, Nokia changed the presentation of net interest income on defined benefit plans from financial expenses to financial income as it better reflects the nature of this item which Nokia expects to be an income also in the foreseeable future. The comparative amounts for 2022 and 2021 have been recast accordingly.
(2)In 2023, includes an expense of EUR 2 million (income of EUR 11 million in 2022 and expense of EUR 33 million in 2021) due to a change in the fair value of the financial liability related to Nokia Shanghai Bell. Refer to Note 6.3. Significant partly-owned subsidiaries.

Financial expenses

EURm	2023	2022	2021
Interest expense on interest-bearing liabilities	(201)	(103)	(113)
Negative interest on financial investments	(3)	(27)	(29)
Interest expense on financing components of other contracts(1)	(126)	(66)	(40)
Interest expense on lease liabilities	(28)	(26)	(24)
Net fair value (losses)/gains on hedged items under fair value hedge accounting	(93)	262	25
Net fair value gains/(losses) on hedging instruments under fair value hedge accounting	89	(265)	(25)
Net foreign exchange (losses)/gains	(187)	20	(60)
Other financial expenses(2)	(26)	(81)	(44)
Total	**(575)**	**(286)**	**(310)**

(1)In 2023, includes EUR 106 million (EUR 46 million in 2022 and EUR 12 million in 2021) related to the sale of receivables.
(2)In 2023, includes an increase in loss allowance of EUR 9 million (impairment of EUR 61 million in 2022 and increase in loss allowance of EUR 32 million in 2021) related to loans extended to certain emerging market customers.

Components of the income tax expense/benefit

EURm	2023	2022	2021
Current tax expense	(431)	(426)	(409)
Deferred tax (expense)/benefit	(394)	2 452	137
Total	**(825)**	**2 026**	**(272)**

Income tax reconciliation

Reconciliation of the difference between income tax computed at the statutory rate in Finland of 20% and income tax recognized in the income statement:

EURm	2023	2022	2021
Income tax expense at statutory rate	(300)	(437)	(385)
Permanent differences	139	87	47
Non-creditable withholding taxes	(41)	(72)	(37)
Income taxes for prior years(1)	22	3	95
Effect of different tax rates of subsidiaries operating in other jurisdictions	(140)	(68)	(57)
Effect of deferred tax assets not recognized(2)	(524)	(107)	(77)
Benefit arising from previously unrecognized deferred tax assets(3)	25	2 646	187
Net (increase)/decrease in uncertain tax positions	(15)	9	(29)
Change in income tax rates	32	24	17
Income taxes on undistributed earnings	(23)	(59)	(33)
Total	**(825)**	**2 026**	**(272)**

(1) In 2021, relates primarily to a tax benefit related to past operating model integration.
(2) In 2023, includes a remeasurement of deferred tax assets related to internal operating model change.
(3) In 2022, includes a re-recognition of deferred tax assets related to Finland.

Income tax liabilities and assets include a net liability of EUR 184 million (EUR 182 million in 2022) relating to uncertain tax positions with inherently uncertain timing of cash outflows.

Prior period income tax returns for certain Group companies are under examination by local tax authorities. Nokia has ongoing tax investigations in various jurisdictions, including the United States, Canada, India, Brazil, Saudi Arabia, France, China and South Korea. Nokia's business and investments, especially in emerging market countries, may be subject to uncertainties, including unfavorable or unpredictable tax treatment. Management judgment and a degree of estimation are required in determining the tax expense or benefit. Even though management does not expect that any significant additional taxes in excess of those already provided for will arise as a result of these examinations, the outcome or actual cost of settlement may vary materially from estimates.

Deferred tax assets and liabilities

Deferred tax assets and liabilities relate to the following:

	2023			2022		
EURm	Deferred tax assets	Deferred tax liabilities	Net balance	Deferred tax assets	Deferred tax liabilities	Net balance
Tax losses carried forward and unused tax credits	1 083	(21)		1 011	—	
Undistributed earnings	—	(215)		—	(193)	
Intangible assets and property, plant and equipment	2 962	(312)		3 267	(309)	
Right-of-use assets	—	(177)		—	(177)	
Defined benefit pension assets	—	(1 913)		—	(1 989)	
Other non-current assets	83	(37)		66	(30)	
Inventories	185	(18)		216	(18)	
Other current assets	221	(93)		225	(95)	
Lease liabilities	156	—		176	—	
Defined benefit pension and other post-employment liabilities	991	—		925	—	
Other non-current liabilities	14	(1)		18	—	
Provisions	245	(138)		311	(73)	

Movements in the net deferred tax balance during the year:

EURm	2023	2022	2021
1 January	**3 502**	**990**	**1 562**
Recognized in income statement, continuing operations	(394)	2 452	137
Recognized in other comprehensive income	51	56	(753)
Other	(3)	2	(6)
Translation differences	(8)	2	50
31 December	**3 148**	**3 502**	**990**

In addition, at 31 December 2023, Nokia has unrecognized deferred tax assets of which the majority relate to France. These deferred tax assets have not been recognized due to uncertainty regarding their utilization. A significant portion of the French unrecognized deferred tax assets are indefinite in nature and available against future French tax liabilities, subject to a limitation of 50% of annual taxable profits.

Amount of temporary differences, tax losses carried forward and tax credits for which no deferred tax asset was recognized due to uncertainty of utilization:

EURm	2023	2022
Temporary differences	1 743	1 579
Tax losses carried forward	19 482	18 324
Tax credits	344	311
Total	**21 569**	**20 214**

Expiry of tax losses carried forward and unused tax credits:

	2023			2022		
EURm	Recognized	Unrecognized	Total	Recognized	Unrecognized	Total
Tax losses carried forward						
Within 10 years	1 375	1 025	2 400	1 344	1 247	2 591
Thereafter	17	—	17	—	4	4
No expiry	2 229	18 457	20 686	2 095	17 073	19 168
Total	**3 621**	**19 482**	**23 103**	**3 439**	**18 324**	**21 763**
Tax credits						
Within 10 years	143	329	472	85	286	371
Thereafter	48	1	49	47	4	51
No expiry	154	14	168	117	21	138
Total	**345**	**344**	**689**	**249**	**311**	**560**

OECD Pillar Two model rules

Nokia is within the scope of the OECD Pillar Two model rules, which introduce a global minimum tax rate of 15% per jurisdiction. Pillar Two legislation has been enacted in Finland, the jurisdiction in which Nokia is incorporated, and will come into effect from 1 January 2024. Since the Pillar Two legislation was not effective at the reporting date, Nokia has no related current tax expense. Nokia applies the exemption to recognizing and disclosing information about deferred tax assets and liabilities related to Pillar Two income taxes, as provided in the amendments to IAS 12 issued in May 2023. Nokia has performed an analysis of the expected impact of the Pillar Two legislation and based on this analysis the impact on income tax expense and effective tax rate in the short term is expected to be immaterial. The main elements of this analysis were the following:

- Current understanding of the interpretation of the rules.
- Applicability of the safe harbors for recent years provided for in the Pillar Two legislation.
- Analysis of potential income tax expense in respect of jurisdictions not meeting safe harbor tests.

2.6. Earnings per share

Accounting policies

Basic earnings per share is calculated by dividing the profit or loss attributable to equity holders of the parent by the weighted average number of shares outstanding during the year. Diluted earnings per share is calculated by adjusting the profit or loss attributable to equity holders of the parent, and the weighted average number of shares outstanding, for the effects of all dilutive potential ordinary shares. Potential ordinary shares are excluded from the calculation of diluted earnings per share when they are determined to be antidilutive.

EURm	2023	2022	2021
Profit or loss attributable to equity holders of the parent			
Continuing operations	660	4 201	1 632
Discontinued operations	5	49	(9)
Profit for the year	665	4 250	1 623
Number of shares (000s)			
Weighted average number of shares outstanding	**5 549 468**	**5 614 182**	**5 630 025**
Effect of potentially dilutive shares			
Performance shares	8 190	46 187	50 300
Restricted shares and other	28 265	9 651	3 910
Total effect of potentially dilutive shares	**36 455**	**55 838**	**54 210**
Adjusted weighted average number of shares	**5 585 923**	**5 670 020**	**5 684 235**
Earnings per share, EUR			
Basic earnings per share			
Continuing operations	0.12	0.75	0.29
Discontinued operations	0.00	0.01	0.00
Profit for the year	0.12	0.76	0.29
Diluted earnings per share			
Continuing operations	0.12	0.74	0.29
Discontinued operations	0.00	0.01	0.00
Profit for the year	0.12	0.75	0.29

Remuneration of the Board of Directors

The annual remuneration paid to the members of the Board of Directors, as decided by the Annual General Meetings in the respective years:

	2023			2022			2021		
	Annual fee(1) EUR	Meeting fees(2) EUR	Shares received(3) number	Annual fee(1) EUR	Meeting fees(2) EUR	Shares received(3) number	Annual fee(1) EUR	Meeting fees(2) EUR	Shares received(3) number
Sari Baldauf, Chair (4)(5)	465 000	10 000	47 427	440 000	—	36 217	440 000	—	43 711
Søren Skou, Vice Chair(4)	225 000	14 000	22 948	210 000	9 000	17 285	175 000	7 000	17 385
Timo Ahopelto(5)(6)	210 000	10 000	21 418	—	—	—	—	—	—
Bruce Brown	—	5 000	—	210 000	17 000	17 285	200 000	7 000	19 868
Elizabeth Crain(4)(6)	215 000	15 000	21 928	—	—	—	—	—	—
Thomas Dannenfeldt(4)(6)	230 000	9 000	23 458	200 000	9 000	16 462	185 000	7 000	18 378
Lisa Hook(4)	200 000	17 000	20 399	185 000	7 000	15 227	—	—	—
Jeanette Horan(5)(6)	210 000	10 000	21 418	195 000	—	16 050	185 000	7 000	18 378
Edward Kozel	—	5 000	—	205 000	12 000	16 874	195 000	7 000	19 372
Thomas Saueressig(5)	195 000	14 000	19 889	180 000	7 000	14 816	—	—	—
Carla Smits-Nusteling(6)	215 000	14 000	21 928	200 000	9 000	16 462	190 000	9 000	18 875
Kari Stadigh	—	—	—	—	—	—	200 000	7 000	19 868
Kai Öistämö(5)	205 000	10 000	20 908	180 000	5 000	14 816	—	—	—
Total	**2 370 000**	**133 000**		**2 205 000**	**75 000**		**1 770 000**	**51 000**	

(1)Annual fees consist of Board member fees and Committee chair and member fees.
(2)Meeting fees include all meeting fees paid for the term that ended at the Annual General Meeting held on 4 April 2023, and meeting fees accrued and paid in 2023 for the term that began at the same meeting.
(3)Approximately 40% of each Board member's annual compensation is paid in Nokia shares purchased from the market, and the remaining approximately 60% is paid in cash.
(4)Annual fees in 2023 include EUR 30 000 for Thomas Dannenfeldt as Chair and EUR 15 000 for Sari Baldauf, Elizabeth Crain, Lisa Hook and Søren Skou as members of the Personnel Committee.
(5)Annual fees in 2023 include EUR 20 000 for Kai Öistämö as Chair and EUR 10 000 for, Timo Ahopelto, Sari Baldauf, Jeanette Horan and Thomas Saueressig as members of the Technology Committee.
(6)Annual fees in 2023 include EUR 30 000 for Carla Smits-Nusteling as Chair and EUR 15 000 for Timo Ahopelto, Elizabeth Crain, Thomas Dannenfeldt and Jeanette Horan as members of the Audit Committee.

3.3. Share-based payments

Accounting policies

Nokia offers three types of global share-based compensation plans for employees: performance shares, restricted shares and the employee share purchase plan. All plans are equity-settled.

Employee services received and the corresponding increase in equity are measured by reference to the fair value of the equity instruments at the grant date, excluding the impact of any non-market vesting conditions. Plans that apply tranched vesting are accounted for under the graded vesting model. Share-based compensation plans are generally conditional on continued employment as well as the fulfillment of any performance conditions specified in the award terms. Until the Nokia shares are delivered, the participants do not have any shareholder rights, such as voting or dividend rights, associated with the shares. The share grants are generally forfeited if the employment relationship with Nokia terminates prior to vesting. Share-based compensation is recognized as an expense over the relevant service periods.

Share-based payment expense

In 2023, the share-based payment expense recognized in the income statement for all share-based compensation plans amounted to EUR 202 million (EUR 149 million in 2022 and EUR 118 million in 2021).

Performance shares

In 2023, Nokia had outstanding Performance shares from grants made in 2020, 2021, 2022 and 2023. Starting in 2021, grants made for Performance shares have been targeted on a more limited basis to senior level employees and executives.

Performance share plans at 31 December 2023:

Plan	Performance shares outstanding at target	Confirmed payout (% of target)	Performance period	Settlement year
2020	—	38 %	2020-2023	2023
2021	16 086 604	12 %	2021-2023	2024
2022	12 141 600	—	2022-2024	2025

Share-based payment plans by instrument

	Performance shares		Restricted shares	
	Number of shares outstanding at target	Weighted average grant date fair value (EUR)	Number of shares outstanding	Weighted average grant date fair value (EUR)
1 January 2021	**99 472 193**		**4 527 593**	
Granted	17 749 650	5.11	25 046 200	5.05
Forfeited	(5 783 031)		(783 950)	
Vested(1)	(31 611 804)		(2 026 150)	
31 December 2021	**79 827 008**		**26 763 693**	
Granted	12 661 300	3.49	32 238 100	4.15
Forfeited	(2 450 396)		(1 695 734)	
Vested(1)	(26 290 064)		(2 778 431)	
31 December 2022	**63 747 848**		**54 527 628**	
Granted	15 207 400	3.10	45 322 400	3.36
Forfeited	(3 916 744)		(1 998 801)	
Vested(1)	(31 691 700)		(3 175 287)	
31 December 2023	**43 346 804**		**94 675 940**	

(1)Vested performance shares at target are to be multiplied by the confirmed payout (% of target) to calculate the total number of Nokia shares settled.

Estimation of grant date fair values

Plan	Grant date fair value
ATSR	Estimated considering the dividend-adjusted Nokia share price at the end of the performance period of the plan and the target payout levels set for the plan.
RTSR	Estimated considering a combination of the dividend-adjusted Nokia share price compared with benchmark companies' share prices at the end of the performance period of the plan and the target payout levels set for the plan.
Restricted Shares	Estimated using the grant date market price of the Nokia share less the present value of dividends expected to be paid during the vesting period.

3.4. Pensions and other post-employment benefits

Accounting policies

Nokia has various post-employment plans in accordance with the local conditions and practices in the countries in which it operates. Nokia's defined benefit plans comprise pension schemes as well as other benefit plans providing post-employment healthcare and life insurance coverage to certain employee groups. Defined benefit plans expose Nokia to various risks such as investment risk, interest rate risk, life expectancy risk, and regulatory/compliance risk. The characteristics and extent of these risks vary depending on the legal, fiscal and economic requirements in each country, as well as the impact of global events.

The plans are generally funded through payments to insurance companies or contributions to trustee-administered funds as determined by periodic actuarial calculations.

The costs of defined benefit plans are assessed using the projected unit credit method. The defined benefit obligation is measured as the present value of the estimated future cash outflows using interest rates on high-quality corporate bonds or government bonds with maturities most closely matching expected payouts of benefits. The plan assets are measured at fair value at the reporting date. The liability or asset recognized in the statement of financial position is the present value of the defined benefit obligation at the reporting date less the fair value of plan assets adjusted for effects of any asset ceiling.

Actuarial valuations for defined benefit plans are performed annually or when a material plan amendment, curtailment or settlement occurs. Service cost related to employees' service in the current period and past service cost resulting from plan amendments and curtailments, as well as gains and losses on settlements, are presented in cost of sales, research and development expenses or selling, general and administrative expenses. Net interest as well as pension plan administration costs not considered in determining the

United States

Nokia has significant defined benefit pension plans and a significant post-employment welfare benefit plan (OPEB) providing post-employment healthcare benefits and life insurance coverage in the United States.

Defined Benefit Pension Plans

The defined benefit pension plans include both traditional service-based programs and cash-balance plans. Salaried, non-union-represented employees are covered by a cash-balance program. All other legacy programs, including legacy service-based programs, were frozen by 31 December 2009. For former employees who, when actively employed, were represented by a union, Nokia maintained two defined benefit pension plans, both of which are traditional service-based programs. On 31 December 2021, these two plans were merged.

Other Post-Employment Benefit Plan

The other post-employment benefit plan provides welfare benefits for certain retired former employees. Pursuant to an agreement with the Communications Workers of America (CWA) and the International Brotherhood of Electrical Workers (IBEW) unions, Nokia provides post-employment healthcare benefits and life insurance coverage for employees formerly represented by these two unions. That agreement was renewed in 2020 and the contract expires on 31 December 2027.

Germany

Nokia maintains two primary plans in Germany which cover the majority of active employees: the cash-balance plan Beitragsorientierter Altersversorgungs Plan (BAP) for the Group's Nokia employees and a similar cash-balance program (AVK Basis-/Matchingkonto) for the Group's former Alcatel-Lucent employees. Individual benefits are generally dependent on eligible compensation levels, ranking within the Group and years of service. These plans are partially funded defined benefit pension plans, the benefits being subject to a minimum return guaranteed by the Group. The funding vehicle for the BAP is the NSN Pension Trust e.V. The trust is legally separate from the Group and manages the plan assets in accordance with the respective trust agreements.

All other plans have been frozen or closed in prior years and replaced by the cash-balance plans. Benefits are paid in annual installments, as monthly retirement pension, or as a lump sum on retirement in an amount equal to accrued pensions and guaranteed interest.

United Kingdom

Nokia maintains one primary plan in the UK, "Nokia Retirement Plan for former NSN & ALU employees", which is the result of the 2019 merger of the legacy Nokia plan where the plan was merged and members' benefits were transferred to the legacy Alcatel-Lucent plan. The combined plan consists of both money purchase sections with Guaranteed Minimum Pension (GMP) underpin and final salary sections. All final salary sections are closed to future benefit accrual: the legacy Nokia plan closed on 30 April 2012 and the legacy Alcatel-Lucent plan on 30 April 2018. Individual benefits for final salary sections are dependent on eligible compensation levels and years of service. For the money purchase sections with GMP underpin, individual benefits are dependent on the greater of the value of GMP at retirement date and the pension value resulting from the individual's invested funds. Nokia engages the services of an external trustee service provider to manage all investments for the combined pension plan.

Movements in the defined benefit obligation, fair value of plan assets and the impact of the asset ceiling limitation for the years ended 31 December

Defined benefit obligation

EURm	2023 United States pension	2023 United States OPEB	2023 Other pension	2023 Total	2022 United States pension	2022 United States OPEB	2022 Other pension	2022 Total
1 January	**(12 340)**	**(1 615)**	**(4 357)**	**(18 312)**	**(14 892)**	**(2 015)**	**(5 797)**	**(22 704)**
Current service cost	(83)	—	(74)	(157)	(113)	—	(92)	(205)
Interest expense	(563)	(73)	(173)	(809)	(363)	(50)	(94)	(507)
Past service cost	(9)	—	3	(6)	—	—	2	2
Settlements(1)	—	—	501	501	—	—	54	54
Total	(655)	(73)	257	(471)	(476)	(50)	(130)	(656)
Remeasurements:								
Gain/(loss) from change in demographic assumptions	66	1	(12)	55	—	(6)	2	(4)
(Loss)/gain from change in financial assumptions	(114)	(26)	(161)	(301)	2 689	398	1 447	4 534
Experience (loss)/gain	(43)	28	(11)	(26)	(159)	(12)	(149)	(320)
Total	(91)	3	(184)	(272)	2 530	380	1 300	4 210
Translation differences	431	57	(12)	476	(869)	(114)	54	(929)
Contributions from plan participants	—	(60)	(24)	(84)	—	(59)	(35)	(94)
Benefits paid	1 330	229	249	1 808	1 367	253	240	1 860
Other	—	(12)	(1)	(13)	—	(10)	11	1
Total	1 761	214	212	2 187	498	70	270	838
31 December	**(11 325)**	**(1 471)**	**(4 072)**	**(16 868)**	**(12 340)**	**(1 615)**	**(4 357)**	**(18 312)**
Weighted average duration of the defined benefit obligation (in years)	7.7	8.8	10.6	8.5	7.6	8.7	9.3	8.1

(1) In 2023, the settlement relates to transfer of liabilities from formerly Nokia managed Provident Fund to Indian government managed Provident Fund platform (EPFO).

Fair value of plan assets

EURm	2023 United States pension	2023 United States OPEB	2023 Other pension	2023 Total	2022 United States pension	2022 United States OPEB	2022 Other pension	2022 Total
1 January	**17 726**	**637**	**4 328**	**22 691**	**20 987**	**759**	**5 382**	**27 128**
Interest income	820	28	171	1 019	517	18	87	622
Administrative expenses and interest on asset ceiling	(17)	—	(4)	(21)	(18)	—	(5)	(23)
Settlements(1)	—	—	(494)	(494)	—	—	(44)	(44)
Total	803	28	(327)	504	499	18	38	555
Remeasurements:								
Return on plan assets, excluding amounts included in interest income	(186)	62	48	(76)	(3 577)	(110)	(959)	(4 646)
Total	(186)	62	48	(76)	(3 577)	(110)	(959)	(4 646)
Translation differences	(624)	(21)	28	(617)	1 271	38	(66)	1 243
Contributions:								
Employers	27	7	41	75	28	9	47	84
Plan participants	—	60	24	84	—	59	35	94
Benefits paid	(1 330)	(229)	(181)	(1 740)	(1 367)	(253)	(138)	(1 758)
Section 420 transfer(2)	(131)	131	—	—	(117)	117	—	—
Other	—	—	(7)	(7)	2	—	(11)	(9)
Total	(2 058)	(52)	(95)	(2 205)	(183)	(30)	(133)	(346)
31 December	**16 285**	**675**	**3 954**	**20 914**	**17 726**	**637**	**4 328**	**22 691**

(1)In 2023, the settlement relates to transfer of assets from formerly Nokia managed Provident Fund to Indian government managed Provident Fund platform (EPFO).
(2)Refer to the Future cash flows section below for description of Section 420 transfers.

The impact of the asset ceiling limitation

EURm	2023 United States pension	2023 United States OPEB	2023 Other pension	2023 Total	2022 United States pension	2022 United States OPEB	2022 Other pension	2022 Total
1 January	**—**	**—**	**(84)**	**(84)**	**—**	**—**	**(92)**	**(92)**
Interest expense	—	—	(2)	(2)	—	—	—	—
Remeasurements:								
Change in asset ceiling, excluding amounts included in interest expense	—	—	5	5	—	—	12	12
Translation differences	—	—	(6)	(6)	—	—	(4)	(4)
31 December	**—**	**—**	**(87)**	**(87)**	**—**	**—**	**(84)**	**(84)**

Net balances

EURm	2023 United States pension	2023 United States OPEB	2023 Other pension	2023 Total	2022 United States pension	2022 United States OPEB	2022 Other pension	2022 Total
31 December	**4 960**	**(796)**	**(205)**	**3 959**	**5 386**	**(978)**	**(113)**	**4 295**
Consisting of:								
Net pension assets	5 217	—	1 041	6 258	5 658	—	1 096	6 754
Net pension liabilities	(257)	(796)	(1 246)	(2 299)	(272)	(978)	(1 209)	(2 459)

Recognized in the income statement

EURm	2023	2022	2021
Current service cost(1)	157	205	196
Past service cost(1)	6	(2)	(17)
Net interest(2)	(187)	(92)	(26)
Settlements(1)	(7)	(10)	4
Total	**(31)**	**101**	**157**

(1)Included in operating expenses within the income statement.
(2)Included in financial income within the income statement.

Recognized in other comprehensive income

EURm	2023	2022	2021
Return on plan assets, excluding amounts included in interest income	(76)	(4 646)	853
Gain/(loss) from change in demographic assumptions	55	(4)	(13)
(Loss)/gain from change in financial assumptions	(301)	4 534	989
Experience (loss)/gain	(26)	(320)	30
Change in asset ceiling, excluding amounts included in interest expense	5	12	1 181
Total	**(343)**	**(424)**	**3 040**

Actuarial assumptions and sensitivity analysis

Actuarial assumptions

The discount rates and mortality tables used for the significant plans:

	Discount rate		Mortality table
	2023	2022	2023
United States	4.7%	4.9%	Pri-2012 w/MP-2020 Mortality projection scale
Germany	3.2%	3.7%	Heubeck 2018G
United Kingdom(1)	4.5%	4.8%	CMI 2021
Total weighted average for all countries	4.4%	4.7%	

(1)Mortality tables for United Kingdom have been adjusted with 1.5% long-term rate of improvement.

Assumptions regarding future mortality are set based on actuarial advice in accordance with published statistics and experience in each country.

The principal actuarial weighted average assumptions used for determining the defined benefit obligation and sensitivity of the defined benefit obligation to changes in these assumptions:

	2023	2022	Change in assumption	Increase in assumption(1) EURm	Decrease in assumption(1) EURm
Discount rate for determining present values	4.4%	4.7%	1.0%	1 279	(1 547)
Pension growth rate	3.3%	2.2%	1.0%	(266)	214
Inflation rate	2.3%	2.1%	1.0%	(294)	270
Life expectancy	87-88 yrs	87-89 yrs	1 year	(626)	587

Investment strategies

The overall pension investment objective of Nokia is to preserve or enhance the defined benefit pension plans' funded status through the implementation of an investment strategy that maximizes return within the context of minimizing funded status risk. In formulating the asset allocation for the plans, multiple factors are considered, including, but not limited to, the long-term risk and return expectations for a variety of asset classes as well as current and multi-year projections of the defined benefit pension plans' demographics, benefit payments, contributions and funded status. Local trustee boards are responsible for conducting Asset-Liability Management (ALM) studies, when appropriate; overseeing the investment of plan assets; and monitoring and managing associated risks under company oversight and in accordance with local law. The results of the ALM framework are implemented on a plan level.

Nokia's pension investment managers may use derivative financial instruments including futures contracts, forward contracts, options and interest rate swaps to manage market risk. The performance and risk profile of investments is regularly monitored on a standalone basis as well as in the broader portfolio context. One risk is a decline in the plan's funded status as a result of the adverse performance of plan assets and/or defined benefit obligations. The application of the ALM study focuses on minimizing such risks.

United States plan assets

The majority of Nokia's United States pension plan assets are held in a master pension trust. The OPEB plan assets are held in two separate trusts. The Pension & Benefits Investment Committee formally approves the target allocation ranges every few years on the completion of the ALM study by external advisers and Nokia's investment management company (NIMCO). The overall United States pension plan asset portfolio, at 31 December 2023, reflects a balance of investments split of approximately 20/80 between equity, including alternative investments for this purpose, and fixed income securities.

Disaggregation of plan assets

	2023				2022			
EURm	Quoted	Unquoted	Total	%	Quoted	Unquoted	Total	%
Equity securities	1 242	—	1 242	6	1 086	—	1 086	5
Fixed income securities	14 952	140	15 092	72	16 070	164	16 234	71
Insurance contracts	—	807	807	4	—	790	790	4
Real estate	—	1 012	1 012	5	—	1 297	1 297	6
Short-term investments	397	—	397	2	482	—	482	2
Private equity and other	106	2 258	2 364	11	93	2 709	2 802	12
Total	**16 697**	**4 217**	**20 914**	**100**	**17 731**	**4 960**	**22 691**	**100**

Most short-term investments including cash, equities and fixed-income securities have quoted market prices in active markets.

Equity securities represent investments in equity funds and direct investments, which have quoted market prices in an active market. Fixed income securities represent direct investments in government and corporate bonds, as well as investments in bond funds, which have quoted market prices in an active market. Insurance contracts are customary pension insurance contracts structured under domestic law in the respective countries. Real estate investments are investments in commercial properties or real estate funds, which invest in a diverse range of real estate properties.

Short-term investments are liquid assets or cash, which are being held for a short period of time, with the primary purpose of controlling the tactical asset allocation. Private equity net asset values (NAVs) are determined by the asset managers based on inputs such as operating results, discounted future cash flows and market-based comparable data. Assets invested in alternative asset classes such as private equity, real estate and absolute return, are measured using latest available valuations pr

Future cash flows

Contributions

Group contributions to the pension and other post-employment benefit plans are made to facilitate future benefit payments to plan participants. The funding policy is to meet minimum funding requirements as set forth in the employee benefit and tax laws, as well as any such additional amounts as Nokia may determine appropriate. Contributions are made to benefit plans for the sole benefit of plan participants. Employer contributions expected to be paid in 2024 total EUR 56 million.

United States

Funding methods

Funding requirements for the two United States qualified defined benefit pension plans are determined by the applicable statutes, namely the Employee Retirement Income Security Act of 1974 (ERISA), the Internal Revenue Code of 1986, and regulations issued by the Internal Revenue Service (IRS). In determining funding requirements, ERISA allows assets to be either fair value or an average value over a period of time; and liabilities to be based on spot interest rates or average interest rates over a period of time. For the non-represented and formerly represented defined benefit pension plans, Nokia does not foresee any future funding requirement for regulatory funding purposes, given the plans' asset allocation and the level of assets compared to liabilities.

Post-employment healthcare benefits for both non-represented and formerly union represented retirees are capped for those who retired after 28 February 1990. The benefit obligation associated with this group of retirees is 98% of the total United States retiree healthcare obligation at 31 December 2023. The US government's Medicare program is the primary payer for those aged 65 and older.

Section 420 transfers

Section 420 of the U.S. Internal Revenue Code (Section 420) allows for the transfer of pension assets in excess of specified thresholds above the plan's funding obligation (excess pension assets) to a retiree health benefits account, a retiree life insurance account, or both, maintained within the pension plan and to use the assets in such accounts to pay for, or to reimburse the employer for the cost of providing applicable health or life insurance benefits, each as defined in Section 420, for retired employees, and with respect to health benefits, their spouses and dependents. Employers making such transfers are required to continue to provide healthcare benefits or life insurance coverage, as the case may be, for a certain period of time (cost maintenance period) at levels prescribed by regulations. Pursuant to Section 420, Nokia has transferred EUR 131 million during 2023 (EUR 117 million in 2022). Section 420 is currently set to expire on 31 December 2032.

Benefit payments

The following table summarizes expected benefit payments from the defined benefit pension plans and other post-employment benefit plans until 2033. Actual benefit payments may differ from expected benefit payments.

EURm	US Pension			US OPEB		Other countries	Total
	Management	Occupational	Supplemental plans	Formerly union represented	Non-union represented		
2024	1 058	217	25	65	57	273	1 695
2025	950	202	25	56	57	248	1 538
2026	909	190	24	55	58	252	1 488
2027	861	177	23	47	58	252	1 418
2028	811	165	23	77	58	252	1 386
2029-2033	3 374	655	99	309	292	1 391	6 120

Benefits are paid from plan assets where there is sufficient funding available to the plan to cover the benefit obligation. Any payments in excess of the plan assets are paid directly by Nokia. Direct benefit payments expected to be paid in 2024 total EUR 111 million.

EURm	Goodwill	Intangible assets	Total
2023			
Acquisition cost at 1 January	6 799	9 778	16 577
Additions	—	299	299
Disposals, retirements and reclassifications	(22)	(23)	(45)
Translation differences	(148)	(161)	(309)
Acquisition cost at 31 December	**6 629**	**9 893**	**16 522**
Accumulated amortization and impairment charges at 1 January	(1 132)	(8 515)	(9 647)
Amortization	—	(423)	(423)
Impairment charges	—	(26)	(26)
Disposals, retirements and reclassifications	—	17	17
Translation differences	7	140	147
Accumulated amortization and impairment charges at 31 December	**(1 125)**	**(8 807)**	**(9 932)**
Net book value at 1 January	5 667	1 263	6 930
Net book value at 31 December	**5 504**	**1 086**	**6 590**
2022			
Acquisition cost at 1 January	6 552	9 499	16 051
Additions	—	49	49
Disposals, retirements and reclassifications	—	(19)	(19)
Translation differences	247	249	496
Acquisition cost at 31 December	**6 799**	**9 778**	**16 577**
Accumulated amortization and impairment charges at 1 January	(1 121)	(7 879)	(9 000)
Amortization	—	(465)	(465)
Disposals, retirements and reclassifications	—	19	19
Translation differences	(11)	(190)	(201)
Accumulated amortization and impairment charges at 31 December	**(1 132)**	**(8 515)**	**(9 647)**
Net book value at 1 January	5 431	1 620	7 051
Net book value at 31 December	**5 667**	**1 263**	**6 930**

Net book value of intangible assets by type of asset

EURm	2023	2022
Customer relationships	605	923
Patents and licenses	316	151
Technologies and IPR&D	31	83
Tradenames and other	134	106
Total	**1 086**	**1 263**

At 31 December 2023, the weighted average for the remaining amortization period is approximately two years for customer relationships, six years for patents and licenses, two years for technologies and IPR&D, and three years for tradenames and other.

Goodwill

Nokia has allocated goodwill to its operating segments corresponding to groups of cash-generating units (CGUs) that are expected to benefit from goodwill. Refer to Note 2.2. Segment information.

Allocation of goodwill

The following table presents the allocation of goodwill to groups of CGUs at 31 December:

EURm	2023	2022
Network Infrastructure	2 739	2 812
Mobile Networks	2 228	2 284
Cloud and Network Services	537	571

Recoverable amounts

The recoverable amounts of the groups of CGUs in 2023 were based on value-in-use that was determined using a discounted cash flow calculation. The cash flow projections used in calculating the recoverable amounts were based on financial plans approved by management covering an explicit forecast period of three years.

Seven additional years of cash flow projections subsequent to the explicit forecast period of three years reflect a gradual progression towards the steady state cash flow projections modeled in the terminal year. The terminal growth rate assumptions reflect long-term average growth rates for the industries and economies in which the groups of CGUs operate. The discount rates reflect current assessments of the time value of money and relevant market risk premiums considering risks and uncertainties for which the future cash flow estimates have not been adjusted. Discounted cash flow projections are based on post-tax cash flows and post-tax discount rates, which do not materially differ from the pre-tax basis discounted cash flow projections. Other key variables in future cash flow projections include assumptions on estimated sales growth, gross margin and operating margin.

Sales growth and gross margin assumptions reflect management expectations of addressable market growth, market share and competitive position, strategy and long-term business outlook. Gross margin and operating profit assumptions include the impact of an ongoing cost savings program announced on 19 October 2023. The cost savings program is expected to reduce cost base and increase operational efficiency especially within Mobile Networks and Cloud and Network Services.

Terminal growth rate and post-tax discount rate applied in the impairment test for the groups of CGUs:

	Terminal growth rate		Post-tax discount rate	
Key assumption %	2023	2022	2023	2022
Network Infrastructure	1.0	1.6	9.3	9.0
Mobile Networks	1.0	1.3	8.3	7.7
Cloud and Network Services	1.0	1.8	7.7	7.0

The results of the impairment testing indicate adequate headroom for each group of CGUs in 2023.

4.2. Property, plant and equipment

Accounting policies

Property, plant and equipment are stated at cost less accumulated depreciation and accumulated impairment losses. Depreciation is recorded on a straight-line basis over the expected useful lives of the assets as follows:

Buildings and constructions	
Buildings and constructions	20–33 years
Light buildings and constructions	3–20 years
Vessels	
Cable-laying vessels	15–40 years
Cable-laying accessories	4–10 years
Machinery and equipment	
Production machinery and measuring and test equipment	1–5 years
Other machinery and equipment	3–10 years

4.3. Leases

Accounting policies

In the majority of its lease agreements, Nokia is acting as a lessee. Nokia's leased assets relate mostly to commercial and industrial properties such as R&D, production and office facilities. Nokia also leases vehicles provided as employee benefits and service vehicles. There are only minor lease contracts, mainly concerning subleases of vacant leasehold or freehold facilities, where Nokia is acting as a lessor.

As a lessee, Nokia recognizes a right-of-use asset and a lease liability at the commencement date of the lease. Right-of-use assets are measured at cost less accumulated depreciation and impairment losses, and adjusted for any remeasurements of the lease liabilities. Right-of-use assets are depreciated on a straight-line basis over the lease term as follows:

Buildings	3–15 years

Nokia applies a simplified approach to recognize a loss allowance based on lifetime ECL on trade receivables and contract assets without significant financing components. Based on quantitative and qualitative analysis, Nokia has determined that the credit risk exposure arising from its trade receivables is low risk. Quantitative analysis focuses on historical loss rates, historic and projected sales and the corresponding trade receivables, and overdue trade receivables including indicators of any deterioration in the recovery expectation. Qualitative analysis focuses on all relevant conditions, including customer and country credit rating, to improve the accuracy of estimating lifetime ECL.
For customer loan receivables, the ECL is calculated separately for each significant counterparty using the

Credit risk exposure by customer and country

Credit exposure is measured as the total of trade receivables, contract assets and loans outstanding from customers and committed credits. Trade receivables do not include any major concentrations of credit risk by customer.

Credit risk exposure by customer and country as % of total trade receivables and contract assets as well as loans and loan commitments to customers:

Customer	2023	2022
Customer 1	12.2%	4.5%
Customer 2	3.6%	3.5%
Customer 3	3.4%	3.3%
Total	**19.2%**	**11.3%**

Country	2023	2022
Country 1(1)	19.0%	14.7%
Country 2	11.7%	10.8%
Country 3	6.1%	7.3%
Total	**36.8%**	**32.8%**

(1) In 2023 Country 1 was India (the United States in 2022).

Contract assets and contract liabilities

Contract asset balances decrease upon reclassification to trade receivables when Nokia's right to payment becomes unconditional. Contract liability balances decrease when Nokia satisfies the related performance obligations and revenue is recognized. There were no material cumulative adjustments to revenue recognized arising from changes in transaction prices, changes in measures of progress or changes in estimated variable consideration.

During the year, Nokia recognized EUR 1.4 billion (EUR 1.6 billion in 2022) of revenue that was included in the current contract liability balance at the beginning of the period.

4.6. Other receivables and liabilities

Other non-current receivables

EURm	2023	2022
R&D tax credits	127	114
Indirect tax receivables	45	46
Other	41	79
Total	**213**	**239**

Other current receivables

EURm	2023	2022
VAT and other indirect tax receivables	302	457
Prepayments related to contract manufacturing	128	62
IT-related prepaid expenses	59	41
R&D tax credits and grant receivables	46	28

4.7. Provisions

Accounting policies

Provision is recognized when Nokia has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required to settle the obligation and a reliable estimate of the amount can be made. Management judgment may be required in determining whether it is probable that an outflow of economic benefits will be required to settle the obligation. The amount recognized as a provision is based on the best estimate of unavoidable costs required to settle the obligation at the end of the reporting period.

When estimating the amount of unavoidable costs, management may be required to consider a range of possible outcomes and their associated probabilities, risks and uncertainties surrounding the events and circumstances, as well as making assumptions about the timing of payment. Changes in estimates of timing or amounts of costs required to settle the obligation may become necessary as time passes and/or more accurate information becomes available. Nokia assesses the adequacy of its existing provisions and adjusts the amounts as necessary based on actual experience and changes in facts and circumstances at each reporting date.

Restructuring provision

Nokia provides for the estimated cost to restructure when a detailed formal plan of restructuring has been completed, approved by management, and announced. Restructuring costs consist primarily of personnel restructuring charges. The other main components are costs associated with exiting real estate locations, and costs of terminating certain other contracts directly linked to the restructuring. At 31 December 2023, the restructuring provision amounted to EUR 255 million including personnel and other restructuring costs. The provision consists primarily of amounts related to the announcements made by

Fair value reserve

Fair value reserve includes the changes in fair value of financial instruments that are managed in a portfolio with a business model of holding financial instruments to collect contractual cash flows including principal and interest, as well as selling financial instruments. The fair value changes recorded in fair value reserve for these instruments are reduced by amounts of loss allowances.

Reserve for invested unrestricted equity

The reserve for invested unrestricted equity includes that part of the subscription price of issued shares that according to the share issue decision is not to be recorded to the share capital as well as other equity inputs that are not recorded to some other reserve. The amount received for treasury shares are recorded to the reserve for invested unrestricted equity, unless it is provided in the share issue decision that it is to be recorded in full or in part to the share capital. The Nokia shares repurchased under the ongoing share buyback program are funded using funds in the reserve for invested unrestricted equity.

Other equity

Retained earnings

Retained earnings is the net total of previous years' profits and losses less dividends paid to the shareholders.

Non-controlling interests

Non-controlling interests represent the share of net assets of certain subsidiaries attributable to their minority shareholders. For more information on the contractual arrangement related to the ownership interests in the Nokia Shanghai Bell Group, refer to Note 6.3. Significant partly-owned subsidiaries.

Changes in other comprehensive income by component of equity

		Fair value and other reserves			
EURm	**Translation differences(1)**	**Pension remeasurements**	**Hedging reserve**	**Cost of hedging reserve**	**Fair value reserve**
1 January 2021	**(1 295)**	**1 940**	**2**	**(10)**	**(22)**
Foreign exchange translation differences	1 162	—	—	—	—
Net investment hedging losses	(249)	—	—	—	—
Remeasurements of defined benefit plans	—	2 302	—	—	—
Net fair value (losses)/gains	—	—	(15)	5	(25)
Transfer to income statement	(7)	—	6	4	32
Movement attributable to non-controlling interests	(7)	—	—	—	—
31 December 2021	**(396)**	**4 242**	**(7)**	**(1)**	**(15)**
Foreign exchange translation differences	697	—	—	—	—
Net investment hedging losses	(147)	—	—	—	—
Remeasurements of defined benefit plans	—	(349)	—	—	—
Net fair value gains/(losses)	—	—	24	(27)	(208)
Transfer to income statement	14	—	61	10	175
Movement attributable to non-controlling interests	1	—	—	—	—
31 December 2022	**169**	**3 893**	**78**	**(18)**	**(48)**
Foreign exchange translation differences	(547)	—	—	—	—
Net investment hedging gains	105	—	—	3	—
Remeasurements of defined benefit plans	—	(261)	—	—	—
Net fair value gains/(losses)	—	—	2	(25)	(87)
Transfer to income statement	19	—	(66)	38	96
Movement attributable to non-controlling interests	5	—	—	—	—
31 December 2023	**(249)**	**3 632**	**14**	**(2)**	**(39)**

Capital management

For capital management purposes Nokia defines capital as total equity and interest-bearing liabilities less cash and cash equivalents, current interest-bearing financial investments and non-current interest-bearing financial investments. The main objectives of Nokia's capital management are to maintain a solid overall financial position and to ensure sufficient financial flexibility to execute Nokia's long-term business strategy and to provide returns to shareholders.

From a cash perspective, Nokia aims to maintain the balance of its cash and cash equivalents and interest-bearing financial investments less interest-bearing liabilities at 10-15% of annual net sales over time. This cash target was announced in March 2023, and it replaced the previous cash target to maintain a level of cash and cash equivalents and interest-bearing financial investments at 30% or more of annual net sales. To support these objectives, Nokia aims to maintain investment grade credit ratings. At 31 December 2023, Nokia's long-term credit ratings are BBB- (stable) by Fitch, Ba1 (stable) by Moody's, and BBB- (stable) by S&P Global Ratings.

With regards to shareholder remuneration, Nokia targets recurring, stable and over time growing ordinary dividend payments, taking into account the previous year's earnings as well as the Company's financial position and business outlook. Nokia may also use share repurchases as a tool to manage its capital structure through the reduction of capital and distribute excess cash to the shareholders.

Distribution of funds

Nokia distributes funds to its shareholders in two ways: a) as dividends from retained earnings and/or as assets from the reserve for invested unrestricted equity, and b) by repurchasing shares using funds in the unrestricted equity. The amount of any distribution is limited to the amount of distributable earnings of the Parent Company, and subject to exceptions relating to the right of minority shareholders to request a certain minimum distribution, the distribution may not exceed the amount proposed by the Board of Directors.

Dividend and/or assets from the reserve for unrestricted invested equity

For the financial year 2023

Nokia's Board of Directors proposes to the Annual General Meeting 2024 that no dividend is distributed by a resolution of the AGM for the financial year ended on 31 December 2023. Instead, the Board proposes to be authorized to decide, in its discretion, on the distribution of an aggregate maximum of EUR 0.13 per share as dividend from the retained earnings and/or as assets from the reserve for invested unrestricted equity. The authorization would be used to distribute dividend and/or assets from the reserve for invested unrestricted equity in four installments during the period of validity of the authorization unless the Board decides otherwise for a justified reason. Distributions of dividend and/or assets from the reserve for unrestricted invested equity are recognized as a reduction of equity and a liability when the Board has decided on the distribution. On the date of issuing the financial statements for 2023 the total number of Nokia shares is 5 613 496 565 and consequently the total amount of distribution would be EUR 730 million. The total number of shares includes the shares held by the Parent Company which are not entitled to a distribution.

For the financial year 2022

The AGM in 2023 resolved to authorize the Board of Directors to decide on the distribution of an aggregate maximum of EUR 0.12 per share as dividend and/or as assets from the reserve of invested unrestricted equity for the financial year 2022. The authorization was used to distribute a dividend in four installments. During 2023, three installments of dividend were distributed amounting to EUR 0.09 per share and EUR 499 million in total. The fourth installment of EUR 0.03 per share and EUR 166 million in total was paid in February 2024. The total amount of dividend paid for the financial year 2022 was EUR 665 million.

Authorizations given to the Board of Directors

The following authorizations related to the issue and repurchase of shares were given to the Board of Directors at the AGM held on 4 April 2023.

Authorization to issue shares and special rights entitling to shares

The shareholders authorized the Board to issue a maximum of 550 million shares, corresponding to less than 10% of the total number of Nokia's shares, through one or more issues of shares or special rights entitling to shares. The Board is authorized to issue either new shares or shares held by Nokia. Shares and special rights entitling to shares may be issued in deviation from the shareholders' pre-emptive rights within the limits set by law. The authorization may be used to develop Nokia's capital structure, diversify the shareholder base, finance or carry out acquisitions or other arrangements, settle Nokia's equity-based incentive plans or for other purposes resolved by the Board of Directors.

The authorization is effective until 3 October 2024, and it terminated the previous authorizations to issue shares and special rights entitling to shares.

Authorization to repurchase shares

The shareholders authorized the Board to repurchase a maximum of 550 million shares, corresponding to less than 10% of the total number of Nokia's shares, using funds in the unrestricted equity, which means that the repurchases will reduce Nokia's distributable funds. Shares may be repurchased to be canceled, held to be reissued, transferred further or for other purposes resolved by the Board. The price paid for the shares shall be based on the market price of Nokia shares on the securities markets on the date of the repurchase or a price otherwise formed in a competitive process. The shares may be repurchased otherwise than in proportion to the shares held by the shareholders. The Board shall resolve on all other matters related to the repurchase of Nokia shares.

The authorization is effective until 3 October 2024, and it terminated the previous authorization to repurchase shares to the extent that the Board has not previously resolved to repurchase shares based on such authorization.

5.2. Financial assets and liabilities

Accounting policies

Fair value

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Financial assets and liabilities measured at fair value are categorized based on the availability of observable inputs used to measure their fair value. Three hierarchical levels are based on an increasing amount of judgment associated with the inputs used to derive fair valuation for these assets and liabilities, Level 1 being market values for exchange traded products, Level 2 being primarily based on publicly available market information and Level 3 requiring most management judgment.

The fair value of an asset or a liability is measured using

Fair value of financial instruments

EURm	2023 Carrying amounts						Fair value[1]	2022 Carrying amounts						Fair value[1]
		Fair value through profit or loss			Fair value through other comprehensive income[2]				Fair value through profit or loss			Fair value through other comprehensive income[2]		
	Amortized cost	Level 1	Level 2	Level 3	Level 2	Total	Total	Amortized cost	Level 1	Level 2	Level 3	Level 2	Total	Total
Non-current interest-bearing financial investments	715	—	—	—	—	715	717	697	—	—	—	—	697	659
Investments in venture funds	—	5	—	779	—	784	784	—	5	—	823	—	828	828
Other non-current financial assets[3]	161	—	96	—	59	316	316	183	—	91	—	27	301	301
Other current financial assets[3]	263	—	—	—	22	285	285	296	—	—	—	36	332	332
Derivative assets[4]	—	—	134	—	—	134	134	—	—	239	—	—	239	239
Trade receivables[3]	—	—	—	—	4 921	4 921	4 921	—	—	—	—	5 549	5 549	5 549
Current interest-bearing financial investments	874	—	691	—	—	1 565	1 565	1 447	—	1 633	—	—	3 080	3 080
Cash and cash equivalents	4 791	—	1 443	—	—	6 234	6 234	4 176	—	1 291	—	—	5 467	5 467
Total financial assets	**6 804**	**5**	**2 364**	**779**	**5 002**	**14 954**	**14 956**	**6 799**	**5**	**3 254**	**823**	**5 612**	**16 493**	**16 455**
Long-term interest-bearing liabilities	3 637	—	—	—	—	3 637	3 614	4 249	—	—	—	—	4 249	4 230
Other long-term financial liabilities	33	—	—	28	—	61	61	—	—	—	48	—	48	48
Short-term interest-bearing liabilities	554	—	—	—	—	554	555	228	—	—	—	—	228	228
Other short-term financial liabilities	65	—	—	471	—	536	536	75	—	—	502	—	577	577
Derivative liabilities[4]	—	—	286	—	—	286	286	—	—	496	—	—	496	496
Discounts without performance obligations[3]	404	—	—	—	—	404	404	539	—	—	—	—	539	539
Trade payables	3 423	—	—	—	—	3 423	3 423	4 730	—	—	—	—	4 730	4 730
Total financial liabilities	**8 116**	**—**	**286**	**499**	**—**	**8 901**	**8 879**	**9 821**	**—**	**496**	**550**	**—**	**10 867**	**10 848**

(1)The following fair value measurement methods are used for items not carried at fair value: The fair values of long-term interest-bearing liabilities, including current portion, are primarily based on publicly available market information (level 2). The fair values of other assets and liabilities, including loan receivables and loans payable, are primarily based on discounted cash flow analysis (level 2). The fair value is estimated to equal the carrying amount for short-term financial assets and financial liabilities due to limited credit risk and short time to maturity.
(2)No financial instruments measured at fair value through other comprehensive income are categorized in fair value hierarchy level 1 or level 3.
(3)For further information on trade receivables, customer loans and discounts without performance obligation, refer to Note 4.5. Trade receivables and other customer-related balances.
(4)For further information on derivative assets and liabilities, refer to Note 5.3. Derivative and firm commitment assets and liabilities.

Financial assets

Interest-bearing financial investments

Nokia invests a portion of the corporate cash needed to cover the projected cash outflows of its ongoing business operations in highly liquid, interest-bearing investments. Interest-bearing financial investments may include investments measured at amortized cost and investments measured at fair value through profit and loss.

Non-current interest-bearing financial investments are investments in highly liquid corporate bonds that are long-term in nature based on their initial maturity and are measured at amortized cost using the effective interest method.

Current interest-bearing financial investments in bank deposits, as well as fixed income and money market securities with an initial maturity or put feature longer than three months, that have characteristics of solely payments of principal and interest and are not part of structured investments, are managed in a portfolio with a business model of holding investments to collect principal and interest and are measured at amortized cost using the effective interest method. These investments are executed with the main purpose of collecting contractual cash flows and principal repayments. However, investments are sold from time to time for liquidity management and market risk mitigation purposes.

Current interest-bearing financial investments may also include money market funds that do not qualify as cash equivalents, investments acquired for trading purposes, investment structures consisting of securities traded in combination with derivatives with complementing and typically offsetting risk factors and other investments that have cash flows not being solely payments of principal and interest. These investments are executed for capital appreciation and other investment returns and can be sold at any time. These investments are classified as fair value through profit or loss, with fair value adjustments, foreign exchange gains and losses and realized gains and losses recognized in financial income and expenses in the income statement. The fair values of these investments are based on publicly available market information.

Corporate cash investments in bank deposits used as collateral for derivative transactions are measured at amortized cost using the effective interest method.

Other financial assets

Other non-current financial assets include unlisted private equity and unlisted venture fund investments, including investments managed by NGP Capital which specializes in growth-stage investing. These investments do not fulfill the criteria of being solely payments of principal and interest and they are classified as investments at fair value through profit and loss. The fair value of these level 3 investments is determined using one or more valuation techniques where the use of the market approach generally consists of using comparable market transactions, while the use of the income approach generally consists of calculating the net present value of expected future cash flows.

For unlisted funds, the selection of appropriate valuation techniques by the fund managing partner may depend on the availability and reliability of relevant inputs. In some cases, one valuation technique may provide the best indication of fair value while in other circumstances multiple valuation techniques may be appropriate.

Inputs generally considered include the original transaction price, recent transactions in the same or similar instruments, completed or pending third-party transactions in the underlying investment or comparable issuers, subsequent rounds of financing, recapitalizations or other transactions undertaken by the issuer, offerings in the equity or debt capital markets, and changes in financial ratios or cash flows, adjusted as appropriate for liquidity, credit, market and/or other risk factors. The fair value may be adjusted to reflect illiquidity and/or non-transferability, with the amount of such discount estimated by the managing partner in the absence of market information.

Investments that have cash flows that are solely payments of principal and interest are measured at amortized cost using the effective interest method whereas all other investments are classified as fair value through profit and loss, with fair value adjustments and foreign exchange gains and losses recognized in financial income and expenses in the income statement. The fair values of these investments are based on publicly available market information.

Financial liabilities

Interest-bearing liabilities

Long-term and short-term interest-bearing liabilities are measured at amortized cost using the effective interest method. Long-term and short-term interest-bearing liabilities include issued bonds and other borrowings. Short-term interest-bearing liabilities also include the current portion of long-term interest-bearing liabilities and collaterals for derivative transactions.

Other financial liabilities

Other financial liabilities mainly include a conditional obligation to China Huaxin as part of the Nokia Shanghai Bell (NSB) definitive agreements where China Huaxin obtained the right to fully transfer its ownership interest in NSB to Nokia in exchange for a future cash settlement. The financial liability related to the conditional obligation is measured based on the expected future cash settlement with any changes recorded in financial income and expenses in the income statement. The measurement of this level 3 financial liability involves estimation of the option exercise price and the distribution of excess cash balances upon exercise. Unobservable valuation inputs include certain financial performance metrics of NSB. No individual input has a significant impact on the total fair value.

Trade payables

Trade payables are carried at invoiced amount in the statement of financial position. Trade payables includes balances payable to suppliers under reverse factoring arrangements with financial institutions. These balances are classified as trade payables and the related payments as cash flows from operating activities, since the payments are made to the banks on very similar terms as to suppliers. Possible extensions to payment terms beyond the due dates agreed with suppliers are insignificant and there are no special guarantees securing the payments to be made.

Interest-bearing loans and other borrowings

All borrowings presented in the table below are senior unsecured and have no financial covenants.

					Carrying amount EURm (1)	
Issuer/borrower	Instrument	Currency	Nominal (million)	Final maturity	2023	2022
Nokia Corporation	2.00% Senior Notes (2)	EUR	378	3/2024	375	736
Nokia Corporation	EIB R&D Loan	EUR	500	2/2025	500	500
Nokia Corporation	NIB R&D Loan (3)	EUR	167	5/2025	167	250
Nokia Corporation	2.375% Senior Notes (2)	EUR	292	5/2025	289	478
Nokia Corporation	2.00% Senior Notes (2)	EUR	630	3/2026	614	716
Nokia Corporation	4.375% Senior Notes	USD	500	6/2027	430	436
Nokia of America Corporation	6.50% Senior Notes	USD	74	1/2028	67	70
Nokia Corporation	3.125% Senior Notes	EUR	500	5/2028	479	457
Nokia of America Corporation	6.45% Senior Notes	USD	206	3/2029	187	194
Nokia Corporation	4.375% Sustainability-linked Senior Notes (4)	EUR	500	8/2031	510	—
Nokia Corporation	6.625% Senior Notes	USD	500	5/2039	463	478
Nokia Corporation and various subsidiaries	Other borrowings				110	162
Total					**4 191**	**4 477**

(1)Carrying amount includes EUR 31 million of fair value losses (EUR 120 million in 2022) related to fair value hedge accounting relationships, including EUR 156 m

5.3. Derivative and firm commitment assets and liabilities

Accounting policies

Fair value

All derivatives are recognized initially at fair value on the date a derivative contract is entered into and subsequently remeasured at fair value. The method of recognizing the resulting gain or loss varies according to whether the derivatives are designated and qualify under hedge accounting.

Foreign exchange forward contracts are valued at market-forward exchange rates. Changes in fair value are measured by comparing these rates with the original contract-forward rate. Currency options are valued at each reporting date by using the Garman & Kohlhagen option valuation model. Interest rate swaps and cross-currency swaps are valued using the discounted cash flow method.

Hedge accounting

Fair value hedges: hedging of interest rate exposure
Nokia applies fair value hedge accounting to reduce exposure to fair value fluctuations of interest-bearing liabilities due to changes in interest rates and foreign exchange rates. Nokia uses interest rate swaps and cross-currency swaps aligned with the hedged items to hedge interest rate risk and associated foreign exchange risk. Nokia has entered into long-term borrowings mainly at fixed rates and has swapped most of them into floating rates in line with a defined target interest profile. Nokia aims to mitigate the adverse impacts from interest rate fluctuations by continuously managing net interest exposure resulting from financial assets and liabilities by setting appropriate risk management benchmarks and risk limits. The hedged

Derivatives and firm commitments

	2023				2022			
	Assets		Liabilities		Assets		Liabilities	
EURm	Fair value(1)	Notional(2)	Fair value(1)	Notional(2)	Fair value(1)	Notional(2)	Fair value(1)	Notional(2)
Cash flow hedges								
Foreign exchange forward contracts	26	1 206	(19)	1 039	77	1 775	(30)	1 034
Currency options bought	3	466	—	—	2	173	—	—
Currency options sold	—	—	—	23	—	—	—	—
Fuel hedges	—	—	(1)	50	2	33	—	—
Cash flow and fair value hedges(3)								
Cross-currency swaps	—	—	(144)	905	—	—	(123)	938
Fair value hedges								
Interest rate swaps	24	1 195	(28)	1 105	—	—	(99)	2 500
Foreign exchange forward contracts	14	627	(59)	1 337	19	393	(163)	1 981
Firm commitments	22	1 788	(9)	434	117	1 842	(28)	384
Hedges on net investment in foreign subsidiaries								
Foreign exchange forward contracts	6	1 111	—	81	—	3 509	(9)	1 103
Derivatives not designated in hedge accounting relationships carried at fair value through profit and loss								
Foreign exchange forward contracts	58	6 889	(35)	6 012	86	5 625	(72)	6 968
Currency options bought	—	10	—	—	—	18	—	—
Embedded derivatives(4)	3	620	—	—	51	2 495	—	—
Other derivatives	—	12	—	—	2	5	—	—
Total	**156**	**13 924**	**(295)**	**10 986**	**356**	**15 868**	**(524)**	**14 908**

(1)Included in other current financial and firm commitment assets and other financial and firm commitment liabilities in the statement of financial position.
(2)Includes the gross amount of all notional values for contracts that have not yet been settled or canceled. The amount of notional value outstanding is not necessarily a measure or indication of market risk as the exposure of certain contracts may be offset by that of other contracts.
(3)Cross-currency swaps have been designated partly as fair value hedges and partly as cash flow hedges.
(4)Embedded derivatives are related to customer contracts.

To manage interest rate and foreign exchange risks related to Nokia's interest-bearing liabilities, Nokia has designated the following cross-currency swaps as hedges under both fair value hedge accounting and cash flow hedge accounting, and interest rate swaps as hedges under fair value hedge accounting at 31 December:

				Notional (million in currency)		Fair value EURm	
Entity	Instrument	Currency	Maturity	2023	2022	2023	2022
Nokia Corporation	Interest rate swaps	EUR	3/2024	378	750	2	(12)
Nokia Corporation	Interest rate swaps	EUR	5/2025	292	500	—	(17)
Nokia Corporation	Interest rate swaps	EUR	3/2026	630	750	(13)	(34)
Nokia Corporation	Cross-currency swaps	USD	6/2027	500	500	(28)	(26)
Nokia Corporation	Interest rate swaps	EUR	5/2028	500	500	(13)	(36)
Nokia Corporation	Interest rate swaps	EUR	8/2031	500	—	20	—
Nokia Corporation	Cross-currency swaps	USD	5/2039	500	500	(116)	(97)
Total						**(148)**	**(222)**

5.4. Financial risk management

General risk management principles

Nokia has a systematic and structured approach to risk management. Key risks and opportunities are primarily identified against business targets either in business operations or as an integral part of strategy and financial planning. Risk management covers strategic, operational, financial, compliance and hazard risks. Key risks and opportunities are analyzed, managed and monitored as part of business performance management. The principles documented in the Nokia Enterprise Risk Management Policy, which is approved by the Audit Committee of the Board, require risk management and its elements to be integrated into key processes. One of the core principles is that the business or function head is also the risk owner, although all employees are responsible for identifying, analyzing and managing risks, as appropriate, given their roles and duties. Nokia's overall risk management concept is based on managing the key risks that would prevent Nokia from meeting its objectives, rather than focusing on eliminating risks. In addition to the principles defined in the Nokia Enterprise Risk Management Policy, other key policies and operating procedures reflect the implementation of specific aspects of risk management, including financial risk management.

Financial risks

The objective for treasury activities is to guarantee sufficient funding at all times and to identify, evaluate and manage financial risks. Treasury activities support this aim by mitigating the adverse effects on the profitability of the underlying business caused by fluctuations in the financial markets, and by managing the capital structure by balancing the levels of liquid assets and financial borrowings. Treasury activities are governed by the Nokia Treasury Policy approved by the President and CEO, which provides principles for overall financial risk management and determines the allocation of responsibilities for financial risk management activities. Operating procedures approved by the Chief Financial Officer (CFO) cover specific areas such as foreign exchange risk, interest rate risk, credit risk and liquidity risk, as well as the use of derivative financial instruments in managing these risks. Nokia is risk averse in its treasury activities.

Financial risks are divided into market risk covering foreign exchange risk and interest rate risk; credit risk covering business-related credit risk and financial credit risk; and liquidity risk.

Market risk

Foreign exchange risk

Nokia operates globally and is exposed to transaction and translation foreign exchange risks. The objective of foreign exchange risk management is to mitigate adverse impacts from foreign exchange fluctuations on Nokia's profitability and cash flows. Treasury applies a global portfolio approach to manage foreign exchange risks within approved guidelines and limits.

Transaction risk arises from foreign currency denominated assets and liabilities together with foreign currency denominated future cash flows. Transaction exposures are managed in the context of various functional currencies of Group companies. Material transactional foreign exchange exposures are hedged, unless hedging would be uneconomical due to market liquidity and/or hedging cost. Exposures are defined using transaction nominal values. Exposures are mainly hedged with derivative financial instruments, such as foreign exchange forward contracts and foreign exchange options with most of the hedging instruments having a duration of less than a year.

A layered hedging approach is typically used for hedging of highly probable forecast foreign currency denominated cash flows with quarterly hedged items defined based on set hedge ratio ranges for each successive quarter. Hedged items defined for successive quarters are hedged with foreign exchange forward contracts and foreign exchange options with a hedge

Notional amounts in currencies that represent a significant portion of the currency mix in outstanding financial instruments and other hedged items at 31 December:

EURm	USD	CNY	JPY	INR
2023				
Foreign exchange exposure designated as hedged item for cash flow hedging, net(1)	606	(232)	281	(153)
Foreign exchange exposure designated as hedged item for fair value hedging for FX risk, net(2)	1 354	—	—	—
Foreign exchange exposure designated as hedged item for net investment hedging(3)	—	788	—	184
Foreign exchange exposure from interest-bearing liabilities(4)	(750)	—	—	—
Foreign exchange exposure from items on the statement of financial position, excluding interest-bearing liabilities, net	2 475	(804)	147	(346)
Other foreign exchange derivatives, carried at fair value through profit and loss, net(5)	(205)	720	(100)	(38)
2022				
Foreign exchange exposure designated as hedged item for cash flow hedging, net(1)	854	(402)	311	(68)
Foreign exchange exposure designated as hedged item for fair value hedging for FX risk, net(2)	1 458	—	—	—
Foreign exchange exposure designated as hedged item for net investment hedging(3)	3 007	866	—	192
Foreign exchange exposure from interest-bearing liabilities(4)	(758)	—	—	—
Foreign exchange exposure from items on the statement of financial position, excluding interest-bearing liabilities, net	(2 709)	(888)	204	(272)
Other foreign exchange derivatives, carried at fair value through profit and loss, net(5)	4 214	892	(151)	(1 117)

(1)Includes foreign exchange exposure from forecast cash flows related to sales and purchases. In some currencies, especially the US dollar, Nokia has substantial foreign exchange exposures in both estimated cash inflows and outflows. These underlying exposures have been hedged.
(2)Includes foreign exchange exposure from contractual firm commitments. These underlying exposures have been substantially hedged.
(3)Includes net investment exposures in foreign operations. These underlying exposures have been hedged.
(4)Includes interest-bearing liabilities that have been hedged with cross-currency swaps and foreign exchange forwards. Refer to Note 5.3. Derivative and firm commitment assets and liabilities.
(5)Items on the statement of financial position are hedged by a portion of foreign exchange derivatives not designated in a hedge relationship and carried at fair value through profit and loss. Embedded derivatives are included in this line item.

Effects of hedge accounting on the financial position and performance

Nokia is using several types of hedge accounting programs to manage its foreign exchange and interest rate risk exposures; refer to Note 5.3. Derivative and firm commitment assets and liabilities.

The effect of these programs on Nokia's financial position and performance at 31 December:

EURm	Cash flow hedges(1)	Net investment hedges(1)	Fair value hedges for FX risk(1)	Fair value and cash flow hedges(1)
2023				
Carrying amount of hedging instruments	2	5	(45)	(174)
Notional amount of hedging instruments	(968)	(1 166)	(1 354)	3 205
Notional amount of hedged items	968	1 166	1 354	(3 205)
Change in intrinsic value of hedging instruments since 1 January	22	132	40	89
Change in value of hedged items used to determine hedge effectiveness	(15)	(132)	(42)	(93)
2022				
Carrying amount of hedging instruments	46	(9)	(145)	(247)
Notional amount of hedging instruments	(1 350)	(4 299)	(1 456)	3 438
Notional amount of hedged items	1 353	4 299	1 458	(3 438)
Change in intrinsic value of hedging instruments since 1 January	(12)	(126)	(111)	(265)
Change in value of hedged items used to determine hedge effectiveness	20	126	112	262

(1)No significant ineffectiveness has been recorded during the periods presented and economic relationships have been fully effective.

The methodology for assessing foreign exchange risk exposures: Value-at-Risk

Nokia uses the Value-at-Risk (VaR) methodology to assess exposures to foreign exchange risks. The VaR-based methodology provides estimates of potential fair value losses in market risk-sensitive instruments as a result of adverse changes in specified market factors, at a specified confidence level over a defined holding period. Nokia calculates the foreign exchange VaR using the Monte Carlo method, which simulates random values for exchange rates in which Nokia has exposures and takes the non-linear price function of certain derivative instruments into account. The VaR is determined using volatilities and correlations of rates and prices estimated from a sample of historical market data, at a 95% confidence level, using a one-month holding period. To put more weight on recent market conditions, an exponentially weighted moving average is performed on the data with an appropriate decay factor. This model implies that, within a one-month period, the potential loss will not exceed the VaR estimate in 95% of possible outcomes.

In the remaining 5% of possible outcomes, the potential loss will be at minimum equal to the VaR figure and, on average, substantially higher. The VaR methodology relies on a number of assumptions, which include the following: risks are measured under average market conditions, changes in market risk factors follow normal distributions, future movements in market risk factors are in line with estimated parameters and the assessed exposures do not change during the holding period. Thus, it is possible that, for any given month, the potential losses at a 95% confidence level are different and could be substantially higher than the estimated VaR.

The VaR calculation includes foreign currency denominated monetary financial instruments, such as current financial investments, loans and trade receivables, cash, and loans and trade payables; foreign exchange derivatives carried at fair value through profit and loss that are not in a hedge relationship and are mostly used to hedge the statement of financial position foreign exchange exposure, as well as embedded derivatives; and foreign exchange derivatives designated as forecast cash flow hedges, fair value hedges and net investment hedges as well as the exposures designated, as hedged items for these hedge relationships.

The VaR risk measures for Nokia's sensitivity to foreign exchange risks are presented in the Total VaR column and the simulated impact to financial statements is presented in the profit, other comprehensive income (OCI) and cumulative translation adjustment (CTA) columns in the table below.

	2023				2022			
		Simulated impact on financial statements				Simulated impact on financial statements		
EURm	Total VaR	Profit	OCI	CTA	Total VaR	Profit	OCI	CTA
31 December	72	67	18	—	38	40	33	—
Average for the year	32	25	23	—	31	36	48	—
Range for the year	19-72	12-67	9-40	0-0	12-67	17-59	31-70	0-0

The most significant foreign exchange hedging instruments under cash flow, net investment and fair value hedge accounting at 31 December:

					Maturity breakdown of notional amounts (EURm)[1]			
	Currency	Fair value (EURm)	Weighted average hedged rate	Total	Within 3 months	Between 3 and 12 months	Between 1 and 3 years	Beyond 3 years
2023								
Cash flow hedge accounting	GBP	(1)	0.8640	(219)	(63)	(156)	—	—
	USD	5	1.0881	(860)	(231)	(629)	—	—
	USD	(2)	1.0832	257	—	119	131	7

Interest rate risk

Nokia is exposed to interest rate risk either through market value fluctuations of items on the statement of financial position (price risk) or through changes in interest income or expenses (refinancing or reinvestment risk). Interest rate risk mainly arises through interest-bearing liabilities and assets. Estimated future changes in cash flows and the structure of the statement of financial position also expose Nokia to interest rate risk.

The objective of interest rate risk management is to mitigate adverse impacts arising from interest rate fluctuations on the income statement, cash flow and financial assets and liabilities while taking into consideration Nokia's target capital structure and the resulting net interest rate exposure. Nokia has entered into long-term borrowings mainly at fixed rates and swapped most of them into floating rates, in line with a defined target interest profile. Nokia has not entered into interest rate swaps where it would be paying fixed rates. Nokia aims to mitigate the adverse impacts from interest rate fluctuations by continuously managing net interest rate exposure arising from financial assets and liabilities, by setting appropriate risk management benchmarks and risk limits.

Treasury monitors and manages interest rate exposure centrally. Nokia uses selective sensitivity analyses to assess and measure interest rate exposure arising from interest-bearing assets, interest-bearing liabilities and related derivatives. Sensitivity analysis determines an estimate of potential fair value changes in market risk-sensitive instruments by varying interest rates in currencies in which Nokia has material amounts of financial assets and liabilities while keeping all other variables constant.

Sensitivities to credit spreads are not reflected in the sensitivity analysis.

Interest rate profile of items under interest rate risk management at 31 December:

	2023		2022	
EURm	Fixed rate	Floating rate[1]	Fixed rate	Floating rate[1]
Non-current interest-bearing financial investments	715	—	697	—
Current interest-bearing financial investments	510	1 055	912	2 168
Cash and cash equivalents	55	6 179	346	5 121
Interest-bearing liabilities	(3 483)	(708)	(3 658)	(819)
Financial assets and liabilities before derivatives	**(2 203)**	**6 526**	**(1 703)**	**6 470**
Interest rate derivatives	3 057	(3 057)	3 216	(3 216)
Financial assets and liabilities after derivatives	**854**	**3 469**	**1 513**	**3 254**

(1)All cash equivalents and derivative transaction-related collaterals with initial maturity of three months or less are considered floating rate for the purposes of interest rate risk management.

Nokia's sensitivity to interest rate exposure in the investment and debt portfolios is presented in the fair value column in the table below with simulated impact to the financial statements presented in the profit and other comprehensive income (OCI) columns.

	2023			2022		
EURm	Impact on fair value	Impact on profit	Impact on OCI	Impact on fair value	Impact on profit	Impact on OCI
Interest rates - increase by 100 basis points	(6)	3	1	(2)	3	(1)
Interest rates - decrease by 100 basis points	8	(4)	(1)	4	(2)	(1)

Credit risk

Credit risk refers to the risk that a counterparty will default on its contractual obligations resulting in financial loss to Nokia. Credit risk arises from credit exposures to customers, including outstanding receivables, financial guarantees and committed transactions, as well as financial institutions, including bank and cash, fixed income and money market investments, and derivative financial instruments. Credit risk is managed separately for business-related and financial credit exposures.

Financial instruments contain an element of risk resulting from changes in the market price due to counterparties becoming less creditworthy or risk of loss due to counterparties being unable to meet their obligations. Financial credit risk is measured and monitored centrally by Treasury. Financial credit risk is managed actively by limiting counterparties to a sufficient number of major banks and financial institutions, and by monitoring the creditworthiness and the size of exposures continuously. Additionally, Nokia enters into netting arrangements with all major counterparties, which give the right to offset in the event that the counterparty would not be able to fulfill its obligations. Nokia enters into collateral agreements with most counterparties, which require

counterparties to post collateral against derivative receivables. Investment decisions are based on strict creditworthiness and maturity criteria as defined in the Treasury-related policies and procedures. As a result of this investment policy approach and active management of outstanding investment exposures, Nokia has not been subject to any material credit losses in its financial investments in the years presented. Due to the high credit quality of Nokia's financial investments, the expected credit loss for these investments is deemed insignificant based on 12 months' expected credit losses at 31 December 2023.
For information on expected credit losses for customer-related balances, refer to Note 4.5. Trade receivables and other customer-related balances.
Nokia has restricted bank deposits primarily related to employee benefits of EUR 119 million (EUR 122 million in 2022) that are presented in other non-current financial assets. Nokia has assessed the counterparty credit risk for these financial assets and concluded that expected credit losses are not significant.

Outstanding non-current and current interest-bearing financial investments, cash equivalents and cash classified by cr edit rating grades ranked in line with S&P Global Ratings categories at 31 December:

EURm	Rating(1)	Cash	Cash equivalents and interest-bearing financial investments: Due within 3 months	Due between 3 and 12 months	Due between 1 and 3 years	Due between 3 and 5 years	Due beyond 5 years	Total(2)(3)
2023	AAA	—	1 443	25	—	—	—	1 468
	AA+ - AA-	1 042	149	74	—	8	—	1 273
	A+ - A-	2 183	1 340	301	255	245	23	4 347
	BBB+ - BBB-	456	242	134	230	227	—	1 289
	Other	133	4	—	—	—	—	137
Total		**3 814**	**3 178**	**534**	**485**	**480**	**23**	**8 514**
2022	AAA	—	1 046	—	—	—	—	1 046
	AA+ - AA-	683	643	250	—	—	—	1 576
	A+ - A-	1 553	2 314	865	190	234	203	5 359
	BBB+ - BBB-	39	477	52	291	197	70	1 126
	Other	123	6	—	—	8	—	137
Total		**2 398**	**4 486**	**1 167**	**481**	**439**	**273**	**9 244**

(1)Bank Parent Company ratings are used here for bank groups. Actual bank subsidiary ratings may differ from the Bank Parent Company rating.
(2)Non-current and current interest-bearing financial investments and cash equivalents include bank deposits, structured deposits, investments in money market f unds and

Liquidity risk

Liquidity risk is defined as financial distress or extraordinarily high financing costs arising from a shortage of liquid funds in a situation where outstanding debt needs to be refinanced or where business conditions unexpectedly deteriorate and require financing. Transactional liquidity risk is defined as the risk of executing a financial transaction below fair market value or not being able to execute the transaction at all within a specific period of time. The objective of liquidity risk management is to maintain sufficient liquidity, and to ensure that it is readily available without endangering its value in order to avoid uncertainty related to financial distress at all times.
Nokia aims to secure sufficient liquidity at all times through efficient cash management and by investing primarily in highly liquid money market investments. Depending on its overall liquidity position, Nokia may pre-finance or refinance upcoming debt maturities before contractual maturity dates. The transactional liquidity risk is minimized by entering into transactions where proper two-way quotes can be obtained from the market. Nokia aims to ensure flexibility in funding by maintaining committed and uncommitted credit lines.
Certain changes in financial liabilities do not have a direct impact on Nokia's liquidity position. A disaggregation of cash and non-cash changes in financial liabilities has been presented in the adjacent table.

Nokia's significant credit facilities and funding programs at 31 December:

Committed/uncommitted	Financing arrangement	Currency	Nominal (million)	Utilized (million): 2023	2022
Committed	Revolving Credit Facility(1)	EUR	1 500	—	—
Uncommitted	Finnish Commercial Paper Programme	EUR	750	—	—
Uncommitted	Euro-Commercial Paper Programme	EUR	1 500	—	—
Uncommitted	Euro Medium Term Note Programme(2)	EUR	5 000	2 300	2 500
Total				**2 300**	**2 500**

(1)The facility has its maturity in June 2026, except for EUR 88 million having its maturity in June 2024.
(2)All euro-denominated bonds have been issued under the Euro Medium Term Note Programme.

Changes in lease liabilities, interest-bearing liabilities and associated derivatives arising from financing activities:

EURm	Long-term interest-bearin g liabilities	Short-term interest-bearin g liabilities	Derivatives hel d to hedge long-term borrowings(1)	Lease liabilities(2)	Total
1 January 2023	**4 249**	**228**	**246**	**1 042**	**5 765**
Cash flows	(283)	(40)	(19)	(239)	(581)
Non-cash changes:					
Changes in foreign exchange rates	(34)	(3)	25	(12)	(24)
Changes in fair value	83	—	(79)	—	4
Reclassification between long-term and short-term	(374)	374	—	—	—
Additions(3)	—	—	—	206	206
Other	(4)	(5)	1	—	(8)
31 December 2023	**3 637**	**554**	**174**	**997**	**5 362**
1 January 2022	**4 537**	**116**	**53**	**1 009**	**5 715**
Cash flows	(1)	27	7	(217)	(184)
Non-cash changes:					
Changes in foreign exchange rates	69	1	(57)	8	21
Changes in fair value	(282)	—	243	—	(39)
Reclassification between long-term and short-term	(84)	84	—	—	—

The following table presents an undiscounted, contractual cash flow analysis for lease liabilities, financial liabilities and financial assets presented on the statement of financial position as well as loan commitments given and obtained. The line-by-line analysis does not directly reconcile with the statement of financial position.

EURm	2023 Due within 3 months	between 3 and 12 months	between 1 and 3 years	between 3 and 5 years	beyond 5 years	Total	2022 Due within 3 months	between 3 and 12 months	between 1 and 3 years	between 3 and 5 years	beyond 5 years	Total
Non-current financial assets												
Non-current interest-bearing financial investments	—	—	394	385	—	**779**	5	7	376	275	104	**767**
Other non-current financial assets(1)	—	—	60	8	46	**114**	—	—	30	2	46	**78**
Current financial assets												
Other current financial assets excluding derivatives(1)	216	31	—	—	—	**247**	207	77	—	—	—	**284**
Current interest-bearing financial investments(2)	998	595	—	—	—	**1 593**	2 146	946	—	—	—	**3 092**
Cash and cash equivalents(2)	6 017	52	30	138	26	**6 263**	4 947	31	136	200	195	**5 509**
Cash flows related to derivative financial assets net settled:												
Derivative contracts – receipts	(7)	(2)	(11)	(12)	(10)	**(42)**	—	—	—	—	—	**—**
Cash flows related to derivative financial assets gross settled:												
Derivative contracts – receipts	8 407	1 582	358	6	—	**10 353**	9 170	2 109	297	20	—	**11 596**
Derivative contracts – payments	(8 349)	(1 560)	(353)	(6)	—	**(10 268)**	(9 089)	(2 038)	(282)	(20)	—	**(11 429)**
Trade receivables	3 834	1 316	184	—	—	**5 334**	4 885	1 004	123	2	—	**6 014**
Non-current financial and lease liabilities												
Long-term interest-bearing liabilities	(33)	(115)	(1 766)	(1 200)	(1 528)	**(4 642)**	(43)	(98)	(2 182)	(1 397)	(1 628)	**(5 348)**
Long-term lease liabilities	—	—	(353)	(199)	(304)	**(856)**	—	—	(340)	(200)	(327)	**(867)**
Other non-current financial liabilities	—	—	(11)	(11)	(11)	**(33)**	—	—	(17)	—	—	**(17)**
Current financial and lease liabilities												
Short-term interest-bearing liabilities	(473)	(98)	—	—	—	**(571)**	(131)	(99)	—	—	—	**(230)**
Short-term lease liabilities	(44)	(179)	—	—	—	**(223)**	(61)	(162)	—	—	—	**(223)**
Other financial liabilities excluding derivatives(3)	(458)	(24)	—	—	—	**(482)**	(482)	(20)	—	—	—	**(502)**
Cash flows related to derivative financial liabilities net settled:												
Derivative contracts - payments	(4)	(29)	(41)	(12)	—	**(86)**	5	(31)	(1)	7	7	**(13)**
Cash flows related to derivative financial liabilities gross settled:												
Derivative contracts – receipts	6 475	1 322	735	541	767	**9 840**	8 832	1 271	919	573	826	**12 421**
Derivative contracts – payments	(6 553)	(1 353)	(806)	(551)	(858)	**(10 121)**	(8 992)	(1 303)	(1 003)	(542)	(778)	**(12 618)**

Legal matters

Accounting policies

Nokia discloses ongoing legal matters that relate to possible obligations whose existence will be confirmed by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of Nokia. These matters are assessed continually to determine whether an outflow of resources embodying economic benefits has become probable so as to recognize a provision.

Nokia is and will likely continue to be subject to various legal proceedings that arise from time to time, including proceedings related to intellectual property, antitrust, commercial disputes, product liability, environmental issues, tax, health and safety, employment and wrongful discharge, sales and marketing practices, international trade, securities, privacy matters and compliance. While management does not expect any of the legal proceedings it is currently aware of to have a material adverse effect on Nokia's financial position, litigation is inherently unpredictable and Nokia may in the future receive judgments or enter into settlements that could have a material adverse effect on its results or cash flows.

Litigation and proceedings

Mass labor litigation in Brazil

Nokia is defending against a number of labor claims in various Brazilian labor courts. Plaintiffs are former employees whose contracts were terminated after Nokia exited from certain managed services contracts. The claims mainly relate to payments made under, or in connection with, the terminated labor contracts. Nokia has closed the majority of the court cases through settlement or judgment.

Asbestos litigation in the United States

Nokia is defending approximately 300 asbestos-related matters, at various stages of litigation. The claims are based on premises liability, products liability, and contractor liability. The claims also involve plaintiffs allegedly diagnosed with various diseases, including but not limited to asbestosis, lung cancer, and mesothelioma.

Intellectual property rights litigation

Continental

In 2019, Continental Automotive Systems (Continental) brought breach of FRAND (fair, reasonable and non-discriminatory terms) and antitrust claims against Nokia and others. The antitrust claims were dismissed. In 2022, this decision became final after Continental lost on appeal and reconsideration requests. Continental also brought breach of contract and FRAND-related claims against Nokia in 2021. In 2023, Nokia's motion to dismiss was granted in part and denied in part, and the action is proceeding on the remaining claims at this time.

OPPO

In 2021, Nokia commenced patent infringement proceedings against OPPO, OnePlus and Realme in several countries in Asia and Europe. OPPO responded by filing invalidation actions and patent infringement actions against Nokia in Germany, China and Finland and actions in China against Nokia relating to standard essential patent licensing issues. In January 2024, Nokia announced that it has concluded a multi-year patent cross-license agreement with OPPO. Under the agreement OPPO will make royalty payments, along with catch-up payments to cover the periods of non-payment. The agreement resolves all pending patent litigation between the parties, in all jurisdictions.

vivo

In 2022, Nokia commenced patent infringement proceedings against vivo in Germany and several countries in Asia. Vivo responded by filing a number of patent infringement actions against Nokia equipment in Germany and China. They also filed an action in China against Nokia relating to standard essential patent licensing issues. In February 2024, Nokia announced that it has concluded a multi-year patent cross-license agreement with vivo. Under the agreement vivo will make royalty payments, along with catch-up payments to cover the periods of non-payment. The agreement resolves all pending patent litigation between the parties, in all jurisdictions.

Amazon

In 2023, Nokia commenced patent infringement proceedings against Amazon in Brazil, Germany, the European Unified Patent Court, India, the United Kingdom and the United States (International Trade Commission/District Court). Across these actions, more than 30 patents are in suit, covering video-related technologies implemented in Amazon's services and devices.

HP

In 2023, Nokia commenced patent infringement proceedings against HP in Brazil, Germany, the European Unified Patent Court and the United States (International Trade Commission/District Court). Across these actions, there are 14 patents in suit, covering video coding technologies

6.2. Principal Group companies

Company name	Country of incorporation	Parent holding %	Group ownership interest %
Nokia Solutions and Networks Oy	Finland	100.0	100.0
Nokia of America Corporation	United States	—	100.0
Nokia Shanghai Bell Co., Ltd.(1)	China	—	50.0
Nokia Solutions and Networks B.V.	Netherlands	—	100.0
Nokia Technologies Oy	Finland	100.0	100.0
Nokia Participations	France	—	100.0
Alcatel Lucent	France	—	100.0
Nokia Networks France	France	—	100.0
Nokia Solutions and Networks India Private Limited	India	—	100.0
Nokia Solutions and Networks Japan G.K.	Japan	—	100.0
Nokia Solutions and Networks Branch Operations Oy	Finland	—	100.0
Alcatel Submarine Networks	France	—	100.0
Nokia Arabia Limited	Saudi Arabia	—	100.0
Nokia Solutions and Networks do Brasil Telecomunicações Ltda.	Brazil	—	100.0
Nokia Solutions and Networks Taiwan Co., Ltd.	Taiwan	—	100.0
Nokia Spain, S.A.	Spain	—	100.0
Nokia UK Limited	United Kingdom	—	100.0
Nokia Solutions and Networks System Technology (Beijing) Co., Ltd.(2)	China	—	50.0
Nokia Canada Inc.	Canada	—	100.0
Nokia Solutions and Networks Italia S.p.A.	Italy	—	100.0
Nokia Solutions and Networks Australia Pty Ltd	Australia	—	100.0

(1)Nokia Group owns 50% plus 1 share of Nokia Shanghai Bell Co., Ltd. with China Huaxin, an entity controlled by the Chinese government, holding the remaining ownership interests. Nokia Shanghai Bell Co., Ltd. is the parent company of the Nokia Shanghai Bell Group (NSB Group). Refer to Note 6.3. Significant partly-owned subsidiaries.
(2)Nokia Solutions and Network System Technology (Beijing) Co., Ltd. is a wholly-owned subsidiary of Nokia Shanghai Bell Co., Ltd. and the Nokia Group has control over this subsidiary through its holding in the NSB Group.

6.3. Significant partly-owned subsidiaries

Nokia holds an ownership interest of 50% plus one share in Nokia Shanghai Bell's parent company, Nokia Shanghai Bell Co., Ltd. (NSB), with China Huaxin Post & Telecommunication Economy Development Center (China Huaxin) holding the remaining ownership interests. Nokia applied judgment to conclude that it is able to control NSB based on an assessment of various factors including the ability to nominate key management personnel, decision-making related to the management of NSB operations and Nokia's exposure to variable returns from NSB.

In 2017, Nokia entered into a contractual arrangement providing China Huaxin with the right to fully transfer its ownership interest in NSB to Nokia and Nokia with the right to purchase China Huaxin's ownership interest in NSB in exchange for a future cash settlement. To reflect this, Nokia derecognized the non-controlling interest balance related to NSB and recognized a financial liability based on the estimated future cash settlement to acquire China Huaxin's ownership interest. In 2023, the contractual arrangement was extended until 30 June 2024. If it expires unexercised, Nokia will derecognize the financial liability and record non-controlling interest equal to its share of NSB's net assets with any difference recorded within shareholders' equity. The measurement of the financial liability is complex as it involves estimation of the option exercise price and the distribution of excess cash balances upon exercise. In 2023, Nokia recognized a EUR 2 million loss (EUR 11 million gain in 2022) in financial income and expenses to reflect a change in the estimated future cash settlement. At 31 December 2023, the expected future cash settlement amounted to EUR 455 million (EUR 482 million in 2022).

Financial information for the Nokia Shanghai Bell Group

Financial information below is presented after elimination of intercompany transactions between entities within the Nokia Shanghai Bell Group but before elimination of intercompany transactions with the rest of the Nokia Group.

EURm	2023	2022
Summarized income statement		
Net sales(1)	979	1 316
Operating loss	(6)	(149)
Loss for the year	(26)	(148)
Loss for the year attributable to:		
Equity holders of the parent	(26)	(148)
Non-controlling interests(2)	—	—
Summarized statement of financial position		
Non-current assets	400	487
Non-current liabilities	(100)	(129)
Non-current net assets	**300**	**358**
Current assets(3)	1 642	1 939
Current liabilities	(900)	(1 185)
Current net assets	**742**	**754**
Net assets(4)	**1 042**	**1 112**
Non-controlling interests(2)	—	—
Summarized statement of cash flows		
Net cash flows from operating activities	51	38
Net cash flows from/(used in) investing activities	2	(33)
Net cash flows used in financing activities	(41)	(4)
Translation differences	(38)	(8)
Net decrease in cash and cash equivalents	**(26)**	**(7)**

6.4. Related party transactions

Nokia has related party transactions with its subsidiaries, associated companies, joint ventures and pension funds as well as the management and the Board of Directors. Transactions and balances between group companies are eliminated on consolidation. For more information on principles of consolidation and principal Group companies, refer to Note 1.2. General accounting policies, and Note 6.2. Principal Group companies, respectively.

Transactions with associated companies and joint ventures

EURm	2023	2022	2021
Sales	46	74	87
Purchases	(141)	(127)	(144)
Trade receivables	18	36	45
Trade payables	(31)	(26)	(29)

Investments in associated companies and joint ventures are individually immaterial.

In 2016, Nokia entered into a strategic agreement with HMD Global Oy (HMD) granting HMD an exclusive global license to create Nokia branded mobile phones and tablets for ten years. Under the agreement, Nokia receives royalty payments from HMD for sales of Nokia branded mobile phones and tablets, covering both brand and patent licensing. In August 2023, Nokia and HMD amended the licensing agreement so that HMD's exclusive license to create Nokia branded devices will expire by March 2026. Nokia has held an ownership interest in HMD since 2020 which it has accounted for as an investment in associate. In 2023, Nokia recorded an impairment loss of EUR 28 million related to its investment in HMD in the share of result of associates and joint ventures.

Nokia holds a 51% ownership interest in TD Tech Holding Limited ("TD Tech HK"), a Hong Kong based joint venture holding company which Nokia has accounted for as an investment in associate. In 2023, TD Tech HK has entered into an agreement to divest the entire business of the joint venture through the sale of TD Tech HK's operating subsidiaries to a consortium consisting of Huawei Technologies, Chengdu High-tech Investment Group and other buyers. The closing of the transaction is conditional upon receiving regulatory approvals for the transaction and is expected in 2024. Following the transaction, Nokia will exit from its shareholding in TD Tech HK. Nokia expects to record a gain on the contemplated transactions. At 31 December 2023, the carrying amount of Nokia's investment in TD Tech HK is included in assets held for sale in the statement of financial position.

Transactions with pension funds

Nokia has borrowings of EUR 37 million (EUR 37 million in 2022) from Nokia Unterstützungsgesellschaft mbH, Nokia's German pension fund, a separate legal entity. The loan bears interest at the rate of 6% per annum and its duration is pending until further notice by the loan counterparties who have the right to terminate the loan with a 90-day notice. The loan is included in short-term interest-bearing liabilities in the statement of financial position. For more information on Nokia's post-employment benefit plans, refer to Note 3.4. Pensions and other post-employment benefits.

Transactions with the Group Leadership Team and the Board of Directors

No loans were granted to the members of the Group Leadership Team and the Board of Directors in 2023, 2022 or 2021. For information on remuneration of Nokia's key management personnel, refer to Note 3.2. Remuneration of key management.

Report of independent registered public accounting firm

To the shareholders and the Board of Directors of Nokia Corporation.

Opinion on the Financial Statements

We have audited the accompanying consolidated statements of financial position of Nokia Corporation and subsidiaries (the "Company") as of December 31, 2023 and 2022, and the related consolidated income statements, consolidated statements of comprehensive income, consolidated statements of changes in shareholders' equity and consolidated statements of cash flows for each of the three years in the period ended December 31, 2023, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2023 and 2022, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2023, in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board and International Financial Reporting Standards as adopted by the European Union.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2023, based on criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated 29 February 2024, expressed an unqualified opinion on the Company's internal control over financial reporting.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the

PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

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

Critical Audit Matters

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

Revenue recognition – Accounting for significant and complex contracts – Refer to Note 2.1 to the

Valuation of Goodwill — Mobile Networks — Refer to Note 4.1 to the financial statements

Critical Audit Matter Description

The Company's evaluation of goodwill for impairment involves the comparison of the recoverable amount of each applicable cash generating unit ("CGU"), or group of CGUs, to its carrying value on at least an annual basis, in line with International Accounting Standard 36 Impairment of Assets. The goodwill balance allocated to Mobile Networks ("MN") is €2,228 million as of 31 December 2023 and is included in the total goodwill balance of €5,504 million. The Company based the recoverable amount on the value in use, which uses a discounted cash flow model.

Management's discounted future cash flow model consists of an explicit three-year long-range forecast and seven additional years of cash flow projections to a terminal year. We identified the valuation of MN's goodwill as a critical audit matter because of the significant estimates and assumptions management made in the value in use calculation related to future revenues, future expenses and cost savings. Auditing the significant judgements and assumptions management made to estimate the recoverable amount of MN required a high degree of auditor judgement and increased audit effort, including the need to involve our valuation specialists.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the determination of the appropriateness of management assumptions in relation to future revenue forecasts and future expenses in the MN cashflows utilized in impairment testing included the following, among others:

- We tested the operating effectiveness of the Company's controls over goodwill impairment evaluation, specifically focusing on controls related to the determination of the recoverable amount, as well as controls over forecasting;
- We held discussions with key members of management to understand how the MN forecast, including key assumptions around future revenues, future expenses, and the impact of cost savings were derived;
- We utilised our valuation specialists to review valuation assumptions, and challenge certain estimates and judgments used in deriving the value in use of MN;
- We challenged net sales, operating expenses and operating margin assumptions by comparing to (1) historical and forecasted peer company data, (2) historical actual results, and (3) prior period internal forecasts;
- We read analyst reports to identify supporting or contradictory information in relation to management's revenue and operating profit assumptions; and
- We evaluated the adequacy of the Company's disclosures against the requirements of IAS 36.

Deloitte Oy

Helsinki, Finland

29 February 2024

We have served as the Company's auditor since 2020.

Report of independent registered public accounting firm

To the shareholders and the Board of Directors of Nokia Corporation.

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Nokia Corporation and subsidiaries (the "Company") as of 31 December 2023, based on criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of 31 December 2023, based on criteria established in Internal Control — Integrated Framework (2013) issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended 31 December 2023, of the Company and our report dated 29 February 2024 expressed an unqualified opinion on those financial statements.

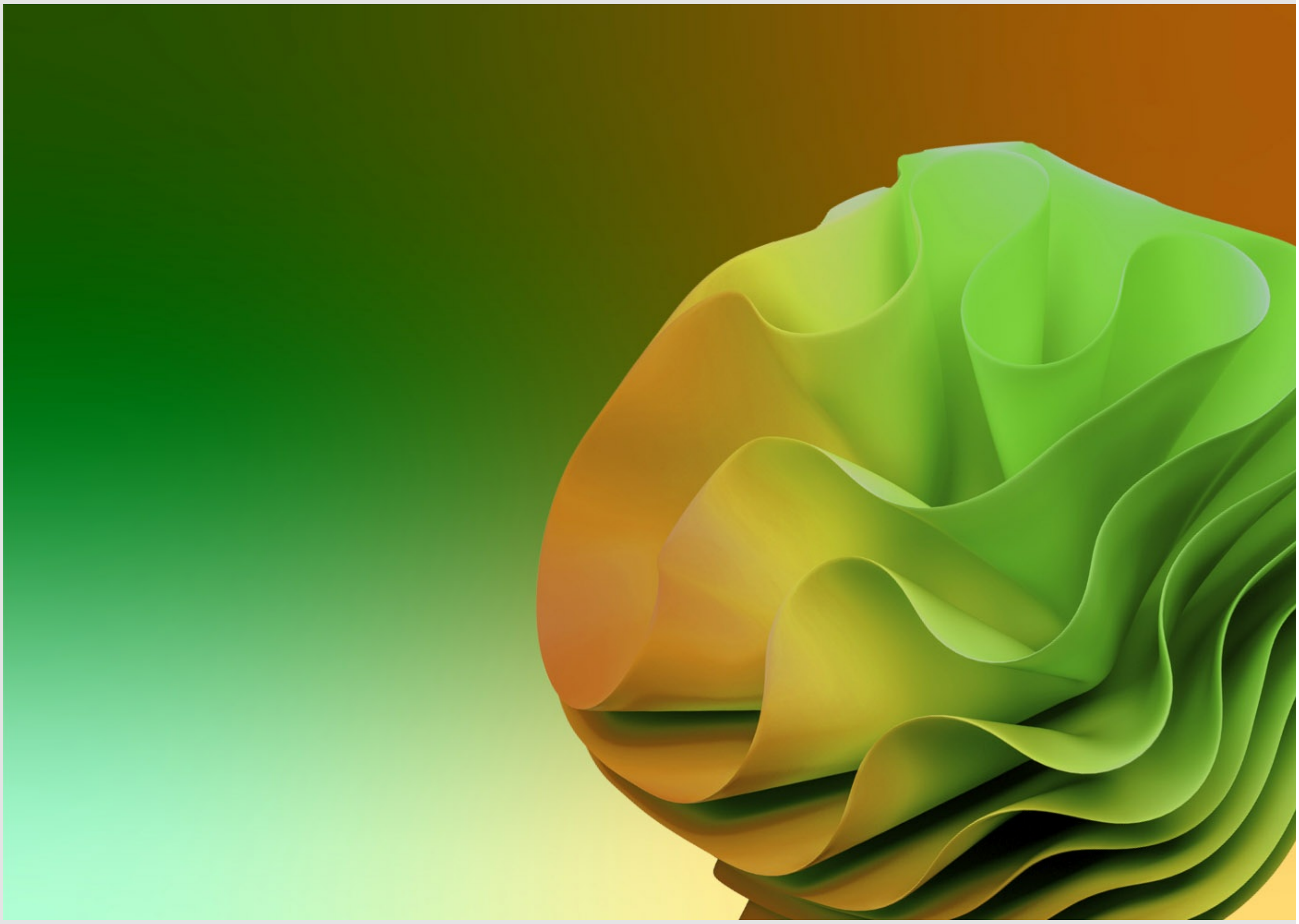
Basis for Opinion

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

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become



Exhibits

1	Articles of Association of Nokia Corporation (incorporated by reference to Exhibit 1 of our Annual Report on Form 20-F filed with the Securities and Exchange Commission on 23 March 2017 (File No. 1-13202)).
8	Refer to Note 6.2. Principal Group companies, in our consolidated financial statements for more information on our significant subsidiaries.
11	Code of Ethics.
12.1	Certification of Pekka Lundmark, President and Chief Executive Officer of Nokia Corporation, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
12.2	Certification of Marco Wirén, Group Chief Financial Officer of Nokia Corporation, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
13	Certification, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
15.1	Consent of Deloitte Oy.
97.1	Executive Officer Clawback Policy.
101	Interactive Data Files (Inline XBRL – Related Documents).
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101).

Glossary

2G (Second Generation Mobile Communications): Also known as GSM (Global System for Mobile Communications): A digital system for mobile communications that is based on a widely-accepted standard and typically operates in the 900 MHz, 1800 MHz and 1900 MHz frequency bands.

3G (Third Generation Mobile Communications): The third generation of mobile communications standards designed for carrying both voice and data generally using WCDMA or close variants. See also WCDMA.

3GPP (The Third Generation Partnership Project): A consortium comprising several standards organizations which develop protocols for mobile telecommunications. The initial goal was to develop a global technical specification for a 3G mobile phone system. Since then, the operations have been extended and today the main focus is on 5G networks.

4G (Fourth Generation Mobile Communications): The fourth generation of mobile communications standards based on LTE, offering IP data connections only and providing true broadband internet access for mobile devices. See also LTE.

5G (Fifth Generation Mobile Communications): The next major phase of mobile telecommunications standards. 5G is a complete redesign of network architecture with the flexibility and agility to support upcoming service opportunities. It delivers higher speeds, higher capacity, extremely low latency and greater reliability.

6G (Sixth Generation Mobile Communications): The cellular industry introduces a new generation about every ten years. The next generation of technology is expected to be introduced by 2030 and is generally referred to as 6G.

Access network: A telecommunications network between a local exchange and the subscriber station.

Airframe: Our 5G-ready, end-to-end data center solution that combines the benefits of cloud computing technologies with the requirements of the core and radio telecommunications world. It is available in Rackmount and Open Compute Project (OCP) form factors. This enables the solution to be very scalable: from small distributed latency-optimized data centers to massive centralized hyperscale data center deployment.

AirScale Radio Access: A 5G-ready complete radio access generation that helps operators address the increasing demands of today and tomorrow. The solution comprises: Nokia AirScale Base Station with multiband radio frequency elements and system modules; Nokia AirScale Active Antennas; Cloud RAN with Nokia AirScale Cloud Base Station Server and the cloud-based AirScale RNC (Radio Network Controller) for 3G; Nokia AirScale Wi-Fi; common software; and services which use intelligent analytics and extreme automation to maximize the performance of hybrid networks.

Alcatel-Lucent: Alcatel-Lucent Group, that has been part of the Nokia Group since 2016.

Anyhaul: Mobile transport solution for 5G networks covering microwave, IP, optical and broadband.

Artificial Intelligence (AI): Autonomous and adaptive intelligence of machines, where machines have the ability to perform tasks in complex environments without constant guidance by a user and have the ability to improve performance by learning from experience.

Bandwidth: The width of a communication channel, which affects transmission speeds over that channel.

Base station: A network element in a mobile network responsible for radio transmission and reception to or from the mobile station.

Broadband: The delivery of higher bandwidth by using transmission channels capable of supporting data rates greater than the primary rate of 9.6 Kbps.

Churn: A measure of the number of customers or subscribers who leave their service provider, e.g., a mobile operator, during a given time period.

Cloud: Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers

Ecosystem: An industry term to describe the increasingly large communities of mutually beneficial partnerships that participants such as hardware manufacturers, software providers, developers, publishers, entertainment providers, advertisers and ecommerce specialists form in order to bring their offerings to market. At the heart of the major ecosystems in the mobile devices and related services industry is the operating system and the development platform upon which services are built.

Enterprise verticals: One of Nokia's customer segments. An enterprise vertical represents a grouping of companies by an industry (like energy or transportation) that offers products and services that meet specific needs of that industry. Within the enterprise verticals segments, we primarily focus on transportation, energy, manufacturing, logistics and the public sector.

ETSI (European Telecommunications Standards Institute): Standards produced by the ETSI contain technical specifications laying down the characteristics required for a telecommunications product.

Fixed Wireless Access (FWA): Uses wireless networks to connect fixed locations such as homes and businesses with broadband services.

FP5: Nokia's fifth generation of high-performance IP routing silicon, and the latest range of our AirScale 5G products.

Future X: A network architecture – a massively distributed, cognitive, continuously adaptive, learning and optimizing network connecting humans, senses, things, systems, infrastructure and processes.

G.fast: A fixed broadband technology able to deliver up to 1Gbps over very short distances (for example, for in-building use, also called "Fiber-to-the-Building"). Launched in 2014, G.fast uses more frequencies and G.fast Vectoring techniques to achieve higher speeds.

GPON (Gigabit Passive Optical Network): A fiber access technology that delivers 25Gbps over a single optical fiber to multiple end points including residential and enterprise sites.

GSM (Global System for Mobile Communications): A digital system for mobile communications that is based on a widely accepted standard and typically operates in the 900 MHz, 1800 MHz and 1900 MHz frequency bands. See also 2G.

GSM-R (GSM-Railway): An international wireless communications standard for railway communication and applications. A sub-system of European Rail Traffic Management System (ERTMS), it is used for communication between train and railway regulation control centers.

Hexa-X: European Commission's flagship 6G initiative for research into the next generation of wireless networks. The initiative began in January 2021 with Nokia as project lead,

working closely with a strong consortium of European partners.
Hyperscalers: One of Nokia's customer segments. Hyperscaler refers to companies like Alphabet (Google), Amazon (Amazon Web Services), Microsoft and Meta Platforms (Facebook) that provide cloud solutions at a global scale leveraging massive connected data centers.
Internet of Things (IoT): All things such as cars, the clothes we wear, household appliances and machines in factories connected to the internet and able to automatically learn and organize themselves.
IP (Internet Protocol): A network layer protocol that offers a connectionless internet work service and forms part of the (Transmission Control Protocol) TCP/IP protocol.
IP (Intellectual Property): Intellectual property results from original creative thought, covering items such as patents, copyright material and trademarks, as well as business models and plans.
IPR (Intellectual Property Rights): Legal rights protecting the economic exploitation of intellectual property, a generic term used to describe products of human intellect, for example patents, that have an economic value.
IP/MPLS (IP Multiprotocol Label Switching): IP/MPLS is a routing technique in telecommunications networks that directs

Operating System (OS): Software that controls the basic operation of a computer or a mobile device, such as managing the processor and memory. The term is also often used to refer more generally to the software within a device, for example, the user interface.
O-RAN: The term O-RAN refers to interfaces and architecture elements as specified by the O-RAN alliance. O-RAN Alliance is a specification group defining next-generation RAN infrastructures, empowered by principles of intelligence and openness.
Packet: Part of a message transmitted over a packet-switched network.
Platform: Software platform is a term used to refer to an operating system or programming environment, or a combination of the two.
PON (Passive Optical Network): A fiber access architecture in which unpowered fiber optic splitters are used to enable a single optical fiber to serve multiple endpoints without having to provide individual fibers between the hub and customer.
Private wireless network: Private wireless is a standalone network focused on industrial operational assets and users. A private wireless network provides broadband connectivity, similar to a public wireless network, but is owned and controlled by the organization that built or purchased it.
Programmable world: A world where connectivity will expand massively, linking people as well as billions of physical objects – from cars, home appliances and smartphones, to wearables, industrial equipment and health monitors. What distinguishes the Programmable World from the Internet of Things (IoT) is the intelligence that is added to data to allow people to interpret and use it, rather than just capture it.
PSE-3: The PSE-3 chipset is the first coherent digital signal processor to implement Probabilistic Constellation Shaping (PCS), a modulation technique pioneered by Nokia Bell Labs.
RAN (Radio Access Network): A mobile telecommunications system consisting of radio base stations and transmission equipment.
SDAN: Software Defined Access Network.
SDN (Software-Defined Network): Decoupling of network control and data forwarding to simplify and automate connections in data centers, clouds and across the wide area.
SD-WAN: Software-Defined Networking in a Wide Area Network (WAN) that simplifies and automates enterprise networks, seamlessly connecting users and applications, from branch office to cloud.
SEP (Standard-Essential Patent): Generally, patents needed to produce products which work on a standard which companies declare as essential and agree to license on Fair, Reasonable and Non-Discriminatory (FRAND) terms. Can also be referred to as essential patent.
Single RAN: Single RAN (S-RAN) allows different radio technologies to be provided at the same time from a single base station, using a multi-purpose platform.
Small cells: Low-powered radio access nodes (micro cells or picocells) that are a vital element in handling very dense data traffic demands. 3G and LTE small cells use spectrum licensed by the operator; Wi-Fi uses unlicensed spectrum which is therefore not under the operator's exclusive control.
Standalone (SA): Network architecture that allows independent operation of a 5G service without interaction with an existing 4G core and 4G radio network.
Technology licensing: Generally, refers to an agreement or arrangement where under certain terms a company provides another company with its technology and possibly know-how, whether protected by intellectual property or not, for use in products or services offered by the other company.
Telco cloud: Applying cloud computing, SDN and NFV principles in telecommunications environment, for example separating application software from underlying hardware with automated, programmable interfaces while still retaining telecommunications requirements such as high availability and low latency.
Transmission: The action of conveying signals from one point

Investor information

Information on the internet

www.nokia.com
Available on the internet: financial reports, members of the Group Leadership Team, other investor-related materials and events, and press releases as well as environmental and social information, including our People & Planet Report, Code of Conduct, Corporate Governance Statement and Remuneration Statement.
SEC maintains an internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC (http://www.sec.gov).

Investor Relations contacts

investor.relations@nokia.com

Annual General Meeting

Date: 3 April 2024
Place: Helsinki, Finland

Dividend

The Board proposes to the Annual General Meeting 2024 to be authorized to decide, in its discretion, on the distribution of an aggregate maximum of EUR 0.13 per share as dividend from the retained earnings and/or as assets from the reserve for invested unrestricted equity.

Financial reporting

Our interim reports in 2024 are planned to be published on 18 April 2024, 18 July 2024 and 17 October 2024. The full-year 2024 results are planned to be published in January 2025.

Information published in 2023

All our global press releases and statements published in 2023 are available on the internet at www.nokia.com/en_int/news/releases.

Stock exchanges

The Nokia Corporation share is quoted on the following stock exchanges:

	Symbol	Trading currency
Nasdaq Helsinki (since 1915)	NOKIA	EUR
New York Stock Exchange (since 1994)	NOK	USD
Euronext Paris (since 2015)	NOKIA	EUR

Documents on display

The documents referred to in this Annual Report on Form 20-F can be read at the Securities and Exchange Commission's internet site at http://www.sec.gov.

Contact information

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Fax +358 (0) 10 44 81 002

Signatures

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this Annual Report on Form 20-F on its behalf.

Nokia Corporation

By: **/S/ STEPHAN PROSI**
Name: Stephan Prosi
Title: Vice President, Corporate Controlling and Accounting

By: **/S/ JOHANNA MANDELIN**
Name: Johanna Mandelin
Title: Global Head of Corporate Legal

29 February 2024