

As filed with the Securities and Exchange Commission on March 23, 2017

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 December 31, 2016

Commission file number 1-13202

Nokia Corporation

(Exact name of Registrant as specified in its charter)

Republic of Finland
(Jurisdiction of incorporation)

Karaportti 3 FI-02610 Espoo, Finland
(Address of principal executive offices)

Riikka Tieaho, Vice President, Corporate Legal, Telephone: +358 (0) 10 44 88 000, Facsimile: +358 (0) 10 44 81 002, Karaportti 3, 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	Name of each exchange on which registered
American Depositary Shares	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:
5.375% Notes due 2019 and 6.625% Notes due 2039.

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: **5 836 055 012**.

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 is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer <input checked="" type="checkbox"/>	Accelerated filer <input type="checkbox"/>
Non-accelerated filer <input type="checkbox"/> (Do not check if a smaller reporting company)	Smaller reporting company <input type="checkbox"/>

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

U.S. GAAP <input type="checkbox"/>
International Financial Reporting Standards as issued by the International Accounting Standards Board <input checked="" type="checkbox"/>
Other <input type="checkbox"/>

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 ☒



Nokia Annual Report on Form 20-F 2016

Cross-reference table to Form 20-F

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	Selected Financial Data	General facts on Nokia—Selected financial data
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
ITEM 4	INFORMATION ON THE COMPANY	
4A	History and Development of the Company	Cover page, Overview, Introduction and use of certain terms; General facts on Nokia—Our history; Operating and financial review and prospects—Liquidity and capital resources; Operating and financial review and prospects—Material subsequent events; Financial statements—Notes to consolidated financial statements—Note 4, Segment information; Financial statements—Notes to consolidated financial statements—Note 5, Acquisitions
4B	Business Overview	Business overview; Operating and financial review and prospects—Principal industry trends affecting our operations; Financial statements—Notes to consolidated financial statements—Note 4, Segment information; General facts on Nokia—Government regulation
4C	Organizational Structure	Overview—This is Nokia—Organizational structure and reportable segments; Financial statements—Notes to consolidated financial statements—Note 4, Segment information; Financial statements—Notes to consolidated financial statements—Note 32, Principal Group companies
4D	Property, Plants and Equipment	Business overview; Financial statements—Notes to consolidated financial statements—Note 2, Significant accounting policies; Financial statements—Notes to consolidated financial statements—Note 6, Disposals treated as Discontinued operations; Financial statements—Notes to consolidated financial statements—Note 15, Property, plant and equipment
4A	UNRESOLVED STAFF COMMENTS	None
ITEM 5	OPERATING AND FINANCIAL REVIEW AND PROSPECTS	
5A	Operating Results	Operating and financial review and prospects—Principal industry trends affecting operations; Financial statements—Notes to consolidated financial statements—Note 2, Significant accounting policies; Financial statements—Notes to consolidated financial statements—Note 36, Risk management
5B	Liquidity and Capital Resources	Operating and financial review and prospects—Liquidity and capital resources; Financial statements—Notes to consolidated financial statements—Note 24, Fair value of financial instruments; Financial statements—Notes to consolidated financial statements—Note 25, Derivative financial instruments; Financial statements—Notes to consolidated financial statements—Note 30, Commitments and contingencies; Financial statements—Notes to consolidated financial statements—Note 36, Risk management
5C	Research and Development, Patents and Licenses	Business overview—Networks business—Research and development; Business overview—Networks business—Patents and licenses; Business overview—Nokia Technologies—Research and development; Business overview—Nokia Technologies—Patents and licenses; Operating and financial review and prospects—Results of operations; Operating and financial review and prospects—Results of segments; General facts on Nokia
5D	Trends Information	Business overview; Operating and financial review and prospects—Principal industry trends affecting operations
5E	Off-Balance Sheet Arrangements	Operating and financial review and prospects—Liquidity and capital resources—Off-Balance Sheet Arrangements; Financial statements—Notes to consolidated financial statements—Note 36, Risk management; Financial statements—Notes to consolidated financial statements—Note 30, Commitments and contingencies
5F	Tabular Disclosure of Contractual Obligations	Financial statements—Notes to consolidated financial statements—Note 30, Commitments and contingencies
5G	Safe Harbor	Forward-looking statements
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 consolidated financial statements—Note 35, Related party transactions
6C	Board Practices	Corporate governance—Corporate governance statement; Corporate governance—Compensation—Remuneration Report; Financial statements—Notes to consolidated financial statements—Note 35, Related party transactions
6D	Employees	Operating and financial review and prospects—Employees
6E	Share Ownership	Corporate governance—Compensation—Remuneration Report; Financial statements—Notes to consolidated financial statements—Note 26, Share-based payments

[Table of Contents](#)

Form 20-F Item Number	Form 20-F Heading	Section in Document
ITEM 7	MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS	
7A	Major Shareholders	General facts on Nokia—Shares and shareholders
7B	Related Party Transactions	General facts on Nokia—Related party transactions, Financial statements—Notes to consolidated financial statements—Note 35, Related party transactions
7C	Interests of Experts and Counsel	N/A
ITEM 8	FINANCIAL INFORMATION	
8A	Consolidated Statements and Other Financial Information	Financial statements; Report of independent registered public accounting firm; Operating and financial review and prospects—Dividend
8B	Significant Changes	Operating and financial review and prospects—Material subsequent events
ITEM 9	THE OFFER AND LISTING	
9A	Offer and Listing Details	General facts on Nokia—Shares and shareholders
9B	Plan of Distribution	N/A
9C	Markets	General facts on Nokia—Shares and shareholders
9D	Selling Shareholders	N/A
9E	Dilution	N/A
9F	Expenses of the Issue	N/A
ITEM 10	ADDITIONAL INFORMATION	
10A	Share capital	N/A
10B	Memorandum and Articles of Association	General facts on Nokia—Memorandum and Articles of Association; Other information—Exhibits
10C	Material Contracts	General facts on Nokia—Our history; Other information—Exhibits
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	Financial statements—Notes to consolidated financial statements—Note 36, Risk Management
ITEM 12	DESCRIPTION OF SECURITIES OTHER THAN 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—Shares and shareholders—Depositary fees and charges; General facts on Nokia—Shares and shareholders—Depositary payments for 2015
ITEM 13	DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES	None
ITEM 14	MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS	None
ITEM 15	CONTROLS AND PROCEDURES	Corporate governance—Regulatory framework—Risk management, internal control and internal audit functions at Nokia; General facts on Nokia—Controls and procedures
ITEM 16A	AUDIT COMMITTEE FINANCIAL EXPERT	Corporate governance—Corporate governance statement—Members of the Board of Directors—Committees of the Board of Directors
16B	CODE OF ETHICS	Corporate governance—Corporate governance statement—Members of the Nokia Group Leadership Team—Further information
16C	PRINCIPAL ACCOUNTANT FEES AND SERVICES	Corporate governance—Corporate governance statement—Auditor fees and services, Corporate governance—Corporate governance statement—Audit Committee pre-approval policies and procedures
16D	EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES	N/A
16E	PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS	General facts on Nokia—Shares and shareholders—Authorization to repurchase shares
16F	CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT	None
16G	CORPORATE GOVERNANCE	Corporate governance—Corporate governance statement—Regulatory framework
16H	MINE SAFETY DISCLOSURE	N/A
ITEM 17	FINANCIAL STATEMENTS	N/A
ITEM 18	FINANCIAL STATEMENTS	Financial Statements
ITEM 19	EXHIBITS	Other information—Exhibits

Forward-looking statements

It should be noted that Nokia and its businesses are exposed to various risks and uncertainties and certain statements herein that are not historical facts are forward-looking statements, including, without limitation, those regarding:

- A) our ability to integrate Alcatel Lucent into our operations and achieve the targeted business plans and benefits, including targeted synergies in relation to the Acquisition of Alcatel Lucent;
- B) expectations, plans or benefits related to our strategies and growth management;
- C) expectations, plans or benefits related to future performance of our businesses;
- D) expectations, plans or benefits related to changes in organizational and operational structure;
- E) expectations regarding market developments, general economic conditions and structural changes;
- F) expectations and targets regarding financial performance, results, operating expenses, 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;
- G) timing of the deliveries of our products and services;
- H) expectations and targets regarding collaboration and partnering arrangements, joint ventures or the creation of joint ventures, as well as our expected customer reach;
- I) outcome of pending and threatened litigation, arbitration, disputes, regulatory proceedings or investigations by authorities;
- J) expectations regarding restructurings, investments, uses of proceeds from transactions, acquisitions and divestments and our ability to achieve the financial and operational targets set in connection with any such restructurings, investments, divestments and acquisitions; and
- K) statements preceded by or including "believe," "expect," "anticipate," "foresee," "sees," "target," "estimate," "designed," "aim," "plans," "intends," "focus," "continue," "project," "should," "will" or similar expressions.

These statements are based on management's best assumptions and beliefs in light of the information currently available to it. Because they involve risks and uncertainties, actual results may differ materially from the results that we currently expect. Factors, including risks and uncertainties that could cause these differences include, but are not limited to:

- 1) our ability to execute our strategy, sustain or improve the operational and financial performance of our business and correctly identify and successfully pursue business opportunities or growth;
- 2) our ability to achieve the anticipated benefits, synergies, cost savings and efficiencies of the Acquisition of Alcatel Lucent, and our ability to implement our organizational and operational structure efficiently;
- 3) general economic and market conditions and other developments in the economies where we operate;
- 4) competition and our ability to effectively and profitably compete and invest in new competitive high-quality products, services, upgrades and technologies and bring them to market in a timely manner;
- 5) our dependence on the development of the industries in which we operate, including the cyclical and variability of the information technology and telecommunications industries;
- 6) our global business and exposure to regulatory, political or other developments in various countries or regions, including emerging markets and the associated risks in relation to tax matters and exchange controls, among others;
- 7) our ability to manage and improve our financial and operating performance, cost savings, competitiveness and synergies after the Acquisition of Alcatel Lucent;
- 8) our dependence on a limited number of customers and large multi-year agreements;
- 9) exchange rate fluctuations, as well as hedging activities;
- 10) Nokia Technologies' ability to protect its IPR and to maintain and establish new sources of patent licensing income and IPR-related revenues, particularly in the smartphone market;

- 11) our dependence on IPR technologies, including those that we have developed and those that are licensed to us, and the risk of associated IPR-related legal claims, licensing costs and restrictions on use;
- 12) our exposure to direct and indirect regulation, including economic or trade policies, and the reliability of our governance, internal controls and compliance processes to prevent regulatory penalties in our business or in our joint ventures;
- 13) our ability to identify and remediate material weaknesses in our internal control over financial reporting;
- 14) our reliance on third-party solutions for data storage and service distribution, which expose us to risks relating to security, regulation and cybersecurity breaches;
- 15) inefficiencies, breaches, malfunctions or disruptions of information technology systems;
- 16) Nokia Technologies' ability to generate net sales and profitability through licensing of the Nokia brand, particularly in digital media and digital health, and the development and sales of products and services, as well as other business ventures which may not materialize as planned;
- 17) our exposure to various legislative frameworks and jurisdictions that regulate fraud and enforce economic trade sanctions and policies, and the possibility of proceedings or investigations that result in fines, penalties or sanctions;
- 18) adverse developments with respect to customer financing or extended payment terms we provide to customers;
- 19) the potential complex tax issues, tax disputes and tax obligations we may face in various jurisdictions, including the risk of obligations to pay additional taxes;
- 20) our actual or anticipated performance, among other factors, which could reduce our ability to utilize deferred tax assets;
- 21) our ability to retain, motivate, develop and recruit appropriately skilled employees;

- 22) disruptions to our manufacturing, service creation, delivery, logistics and supply chain processes, and the risks related to our geographically-concentrated production sites;
- 23) the impact of litigation, arbitration, agreement-related disputes or product liability allegations associated with our business;
- 24) our ability to optimize our capital structure as planned and re-establish our investment grade credit rating or otherwise improve our credit ratings;
- 25) our ability to achieve targeted benefits from or successfully implement planned transactions, as well as the liabilities related thereto;
- 26) our involvement in joint ventures and jointly-managed companies;
- 27) the carrying amount of our goodwill may not be recoverable;
- 28) uncertainty related to the amount of dividends and equity return we are able to distribute to shareholders for each financial period;
- 29) pension costs, employee fund-related costs, and healthcare costs; and
- 30) risks related to undersea infrastructure, as well as in Nokia's other filings with the U.S. Securities and Exchange Commission. Other unknown or unpredictable factors or underlying assumptions subsequently proven to be incorrect could cause actual results to differ materially from those in the forward-looking statements. We do not undertake any obligation to publicly update or revise forward-looking statements, whether as a result of new information, future events or otherwise, except to the extent legally required.

Introduction and use of certain terms

Nokia Corporation is a public limited liability company incorporated under the laws of the Republic of Finland. 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 to 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 January 1, 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, and references to "dollars", "U.S. dollars", "USD" or "\$" are to the currency of the United States. Solely for the convenience of the reader, this annual report on Form 20-F contains conversions of selected euro amounts into U.S. dollars at specified rates or, if not so specified, at the rate of 1.0552 U.S. dollars per euro, which was the noon buying rate in New York City for cable transfers in euro as certified for customs purposes by the Federal Reserve Bank of New York on December 31, 2016. No representation is made that the amounts have been, could have been or could be converted into U.S. dollars at the rates indicated or at any other rates.

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 as issued by the International Accounting Standards Board and in conformity with IFRS as adopted by the European Union ("IFRS"). In accordance with the rules and regulations of the SEC, we do not provide a reconciliation of net income and shareholders' equity in our consolidated financial statements to accounting principles generally accepted in the United States, or U.S. 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 ADRs 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 <http://citibank.ar.wilink.com> (enter "Nokia" in the Company Name Search). 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.



Overview

Contents

Overview

[This is Nokia](#)

[Key data](#)

[Nokia in 2016 – a successful first year of combined operations](#)

Business overview

[Letter from our President and CEO](#)

[Our role as a global technology leader](#)

[Our values](#)

[Our strategy](#)

[Our leadership](#)

[Our businesses](#)

Operating and financial review and prospects

[Principal industry trends affecting operations](#)

[Results of operations](#)

[Results of segments](#)

[Liquidity and capital resources](#)

[Material subsequent events](#)

[Sustainability and corporate responsibility](#)

[Employees](#)

[Dividend](#)

[Risk factors](#)

[Shares and share capital](#)

[Board of Directors and management](#)

[Articles of Association](#)

Corporate governance

[Corporate governance statement](#)

[Compensation](#)

General facts on Nokia

[Our history](#)

[Memorandum and Articles of Association](#)

[Selected financial data](#)

[Shares and shareholders](#)

[Depository payments in 2016](#)

[Related party transactions](#)

[Production of infrastructure equipment and products](#)

[Key ratios](#)

[Controls and procedures](#)

[Government regulation](#)

[Sales in U.S.-sanctioned countries](#)

[Taxation](#)

Financial statements

[Consolidated primary statements](#)

[Notes to consolidated financial statements](#)

[Report of independent registered public accounting firm](#)

Other information

[Exhibits](#)

[Glossary of terms](#)

[Investor information](#)

[Contact information](#)

[Signatures](#)

This is Nokia

We create the technology to connect the world. Powered by the research and innovation of Nokia Bell Labs, we serve communications service providers, governments, large enterprises and consumers with the industry's most complete end-to-end portfolio of products, services and licensing. From the enabling infrastructure for 5G and the Internet of Things ("IoT") to emerging applications in Virtual Reality ("VR") and digital health, we are shaping the future of technology to transform the human experience.

Since the closing of the Alcatel Lucent acquisition in early January 2016 (the "Acquisition of Alcatel Lucent"), we have combined global leadership in mobile and fixed network infrastructure with the software, services and advanced technologies to serve customers in more than 100 countries around the world. We are driving the transition to smart, virtual networks and connectivity by creating one single network for all services, converging mobile and fixed broadband, IP routing and optical networks, with the software and services to manage them. Our research scientists and engineers continue to invent new technologies that will increasingly transform the way people and things communicate and connect: 5G, ultra broadband access, IP and Software Defined Networking ("SDN"), Cloud applications, IoT and security platforms, data analytics, as well as sensors and imaging.

Through our five business groups, we have a global presence with operations in Europe, the Middle East & Africa, Greater China, North America, Asia-Pacific and Latin America. In 2016, we had sales in approximately 130 countries. We also have research and development ("R&D") facilities in Europe, North America and Asia, and at the end of 2016, we employed approximately 101 000 people.

We closed 2016 delivering net sales of EUR 23.6 billion. We continued to make significant targeted R&D investments, a bedrock of our success in innovation, with R&D expenditures equaling EUR 4.9 billion in 2016.

Countries of operation

100+

Number of employees at the end of 2016

~101 000

R&D investment in 2016

EUR 4.9bn

Acquisition of Alcatel Lucent

In April 2015, we announced plans to acquire Alcatel Lucent with an aim to create an innovation leader in next generation technology and services. The all-share transaction was agreed on the basis of 0.55 new Nokia shares for every Alcatel Lucent share, a transaction valued at EUR 15.6 billion on a fully diluted basis.

At the end of 2015, our shareholders voted overwhelmingly to approve the Alcatel Lucent acquisition, and in early January 2016 we announced that we had gained control of Alcatel Lucent through the successful public exchange offer for all outstanding Alcatel Lucent securities by holding nearly 80% of outstanding Alcatel Lucent securities.

During the course of the year, we continued to take steps towards gaining full ownership of Alcatel Lucent through the initial and reopened exchange offers and by purchasing Alcatel Lucent shares and OCEANE convertible bonds in privately negotiated transactions, consequently reaching full ownership of Alcatel Lucent in November 2016.

On October 4, 2016, the French stock market authority (Autorité des marchés financiers, the "AMF") announced that a legal action was filed before the Paris Court of Appeal on September 30, 2016 for annulment of the AMF's clearance decision regarding our public buy-out offer, which would be followed by a squeeze-out of all remaining securities of Alcatel Lucent. As a result, the public buy-out offer period was extended and the squeeze-out was postponed. We found the legal challenge to be without merit, as we believed that the offer complied with all applicable laws and regulations.

On October 25, 2016, with the legal challenge still pending, the AMF announced the continuation of the timetable of the public buy-out offer followed by a squeeze-out of all remaining securities of Alcatel Lucent, allowing the public buy-out period to end on October 31, 2016 and the squeeze-out to be implemented on November 2, 2016. On November 2, 2016, we achieved 100% ownership of Alcatel Lucent.

On December 15, 2016, the plaintiffs withdrew the complaint they had filed before the Paris Court of Appeal and, consequently, the public buy-out offer followed by a squeeze-out had therefore become definitive, confirming our ownership of 100% of Alcatel Lucent.



This is Nokia continued

Organizational structure and reportable segments

January 14, 2016 was Nokia and Alcatel Lucent's first day of combined operations.

After the Acquisition of Alcatel Lucent, we organized our networks-oriented businesses into four business groups: Mobile Networks, Fixed Networks, IP/Optical Networks and Applications & Analytics (together the "Networks business"); and kept our driver of future innovation and licensing, Nokia Technologies, as a separate fifth business group. For descriptions of our business groups, refer to "Business overview—Networks business" and "Business overview—Nokia Technologies".

We have three reportable segments: (i) Ultra Broadband Networks comprising Mobile Networks and Fixed Networks, (ii) IP Networks and Applications comprising IP/Optical Networks and Applications & Analytics (all within our Networks business), and (iii) Nokia Technologies.

Following the changes to our organizational structure announced on March 17, 2017, we will continue to report financial information for Ultra Broadband Networks, IP Networks and Applications and Nokia Technologies. Ultra Broadband Networks will be composed of the Mobile Networks, Global Services and Fixed Networks business groups. IP Networks and Applications is composed of the IP/Optical Networks and Applications & Analytics business groups.

Additionally, we report the results of other business activities that are not reportable segments, such as our undersea cables business, Alcatel-Lucent Submarine Networks ("ASN"), and our antenna systems business, Radio Frequency Systems ("RFS"), in aggregate. Both ASN and RFS are being managed as separate businesses.

Our business groups in 2016

Mobile Networks

Higher quality and more reliable mobile broadband experiences

Fixed Networks

More bandwidth in more places giving communities more access to the world

IP/Optical Networks

Massively scalable networks securely connecting everyone and everything to the Cloud

Applications & Analytics

Intelligent software platforms optimizing and automating network performance

Nokia Technologies

Connected health devices; professional Virtual Reality capture and broadcast; and highly valuable brand, intellectual property and technologies

Key data

Net sales 2016

EUR 23.6bn

Gross margin 2016

35.8%

Dividend per share 2016

EUR 0.17

Net cash as of December 31, 2016

EUR 5.3bn

The following table sets forth summary financial and non-financial information for the years ended December 31, 2016 (including Alcatel Lucent) and December 31, 2015 for our Continuing operations. This data has been derived from our consolidated financial statements, which are included in this annual report on Form 20-F.

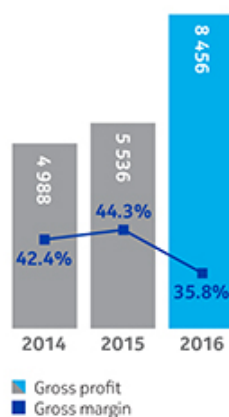
For the year ended December 31	2016 EURm	2015 EURm	Change
Net sales	23 614	12 499	89%
Nokia's Networks business	21 800	11 487	90%
Ultra Broadband Networks	15 771	10 159	55%
IP Networks and Applications	6 029	1 328	354%
Nokia Technologies	1 053	1 027	3%
Group Common and Other	1 145	—	—
Gross margin	35.8%	44.3%	(850)bps
Operating (loss)/profit	(1 100)	1 697	—
Nokia's Networks business	1 935	1 349	43%
Ultra Broadband Networks	1 362	1 211	12%
IP Networks and Applications	573	138	315%
Nokia Technologies	579	698	(17)%
Group Common and Other	(342)	(89)	284%
Unallocated items(1)	(3 272)	(261)	—
Operating margin	(4.7)%	13.6%	(1 830)bps
Financial income and expenses, net	(287)	(186)	54%
Income tax benefit/(expense)	457	(346)	—
(Loss)/profit	(912)	1 194	—
Earnings per share ("EPS"), EUR diluted	(0.13)	0.31	—
Average number of employees	102 687	56 690	81%
Net sales by region			
Asia-Pacific	4 206	3 230	30%
Europe	6 393	3 813	68%
Greater China	2 656	1 712	55%
Latin America	1 457	973	50%
Middle East & Africa	1 871	1 177	59%
North America	7 031	1 594	341%
Total	23 614	12 499	89%

(1) Includes costs related to the Acquisition of Alcatel Lucent and related integration, goodwill impairment charges, intangible asset amortization and other purchase price fair value adjustments, restructuring and associated charges and certain other items.

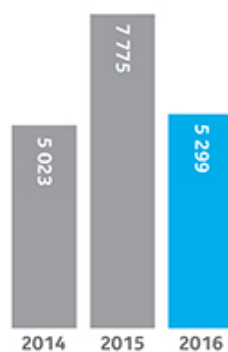
Net sales (EURm)



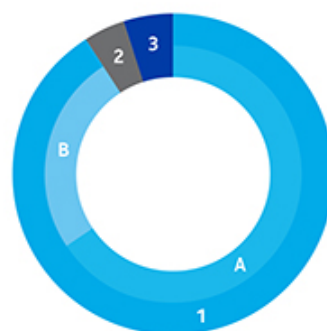
Gross profit (EURm) and gross margin (%)


Dividend per share (EUR)⁽¹⁾

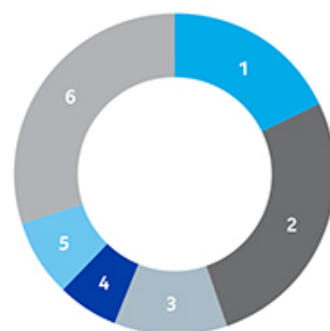

Net cash as of December 31 (EURm)



Net sales 2016 by business



Net sales 2016 by region



(1) We also paid a special dividend of EUR 0.10 per share in line with our capital structure optimization program announced on October 29, 2015.

(2) All Nokia Technologies IPR and licensing net sales are allocated to Finland. Year-on-year change is in parentheses.

Derived from our financial statements which were prepared in accordance with IFRS.

Nokia in 2016 – a successful first year of combined operations

January

January 14, 2016

We celebrated our first day of combined operations after gaining control of Alcatel Lucent following a successful public exchange offer earlier that month, after which we held nearly 80% of the outstanding Alcatel Lucent shares. This marked the completion of our latest transformation and the formation of a global leader in creating the technologies at the heart of our connected world.

February

February 21, 2016

We underscored our leadership in 5G development by announcing 5G-ready Nokia AirScale, an innovative next-generation radio access solution that will enable operators to satisfy future demands.

February 21, 2016

Nokia Growth Partners announced the closing of a new USD 350 million fund for investments in IoT companies.

March

March 18, 2016

We announced the start of European sales for the OZO professional VR camera, as well as new post-production partnerships to advance end-to-end solutions for creating next generation digital media experiences.

March 31, 2016

We completed the acquisition of Canadian software firm Nakina Systems, which specializes in security and orchestration software for virtual and hybrid networks.

April

April 26, 2016

We announced our plans to acquire Withings in line with our strategy to accelerate our entry into digital health within our Nokia Technologies business. Withings is a pioneer in the connected health revolution with a track record of award-winning digital health products and services. We completed the acquisition on May 31, 2016.

May

May 18, 2016

We signed a strategic brand and intellectual property licensing agreement granting HMD Global Oy ("HMD Global") an exclusive global license to create Nokia branded mobile phones and tablets for the next ten years. The agreement entered into effect on December 1, 2016, allowing HMD Global to begin operations as the new home of Nokia phones.

June

June 28, 2016

We demonstrated the world's first 5G-ready network at 5G World, built using our commercially available network platforms.

November 2, 2016

We gained 100% ownership of Alcatel Lucent after a successful public buy-out of the remaining Alcatel Lucent securities followed by a squeeze-out.



July

July 13, 2016

We agreed with Samsung to expand our patent cross license agreement to cover certain additional patent portfolios of both Nokia and Samsung. The agreement expands access for each company to patented technologies of the other and reinforces Nokia's leadership in technologies for the Programmable World.

July 29, 2016

We completed the acquisition of Gainspeed, a California-based start-up specializing in Distributed Access Architecture ("DAA") solutions for the cable industry. With this acquisition, we are able to offer a turnkey solution for the cable industry that includes products for routing, transport, wireless and analytics.

August

August 4, 2016

As a result of successful integration work and increased granular visibility into the business of the combined company, we raised our estimate of net operating cost synergies and announced a target of EUR 1.2 billion in total cost savings in full year 2018 compared to the combined operating costs of Nokia and Alcatel Lucent for the full year 2015, excluding Nokia Technologies. Our earlier estimate was EUR 900 million.

September

September 1, 2016

We announced our new plan to bridge the transition from 4G to 5G with 4.5G Pro, an advanced mobile technology that delivers significant capacity and speed enhancements needed by operators as they build towards next-generation networks. We also outlined our plans for 4.9G, which will allow users to maintain a continuous 5G service experience using an evolved LTE to complement 5G radio coverage.

September 8, 2016

We were included in the Dow Jones Sustainability Index for the second year running in recognition of our economic, environmental and social responsibility. We also improved our overall score compared to 2015.

October

October 4, 2016

We announced the acquisition of Eta Devices, a United States-based start-up specializing in power amplifier efficiency solutions for base stations, access points and devices.

November

November 2, 2016

We gained 100% ownership of Alcatel Lucent after a successful public buy-out of the remaining Alcatel Lucent securities followed by a squeeze-out.

November 15-16, 2016

We held our Capital Markets Day event in Barcelona, Spain, where we updated the market on our new financial and strategic priorities. Following the event, we commenced a EUR 1 billion share repurchase program in line with our capital structure optimization program.

December

December 15, 2016

We announced our intention to acquire Deepfield, the United States-based leader in real-time analytics for IP network performance management and security. The acquisition extends our leadership in real-time, analytics-driven network and service automation.

February 9, 2017

We announced plans to acquire Comptel, a publicly listed Finnish company providing software and services for digital and communications service providers to advance our strategy of building a standalone software business.

Business overview





Business overview

Contents

- [Letter from our President and CEO](#)
- [Our role as a global technology leader](#)
- [Our values](#)
- [Our strategy](#)
- [Our leadership](#)
- [Our businesses](#)
 - [Networks business](#)
 - [Market overview](#)
 - [Competition](#)
 - [Mobile Networks](#)
 - [Fixed Networks](#)
 - [IP/Optical Networks](#)
 - [Applications & Analytics](#)
 - [Services](#)
 - [Sales and marketing](#)
 - [Research and development](#)
 - [Patents and licenses](#)
 - [Nokia Technologies](#)
 - [Market overview](#)
 - [Business overview and organization](#)
 - [Sales and marketing](#)
 - [Research and development](#)
 - [Patents and licenses](#)
 - [Competition](#)

Letter from our President and CEO



2016 was a year of remarkable change for Nokia.

We started the year primarily as a mobile networks and patent licensing company. Today we are a fundamentally different company, with a complete portfolio that spans mobile, fixed, cable, routing, optical, standalone software, services, digital health, and VR, as well as licensing activities covering patents, brand, technology, and more.

During this transformation, we delivered solid financial performance, made significant progress integrating Alcatel Lucent, launched compelling innovations for our customers, moved forward with the execution of our strategy, and are on track to meet our commitment to reduce costs by EUR 1.2 billion in full year 2018.

Financial highlights

In the context of a challenging market and a major integration effort, we performed well in 2016. Our Networks business delivered an operating margin of 8.9% in 2016, and Nokia Technologies' net sales increased by 3% to EUR 1.1 billion in 2016. While overall sales were down compared to sales of both Nokia and Alcatel Lucent in 2015, profitability held up well. Because of this strong performance, our Board of Directors will propose an increased dividend compared to 2015 and compared to our original capital structure optimization plans.

Integration progress

Despite having only closed the Acquisition of Alcatel Lucent in early January 2016 and gained 100% ownership on November 2,

2016, we have completed the majority of our integration projects. While we have agreed product transition plans with all major customers, execution of those programs will take further time. That said, the speed of progress and quality of work have been considerably higher than I have witnessed in past integrations.

Customers

Customers have responded extremely well to the scope of our new end-to-end portfolio. It has increased our credibility with major communication services providers ("CSPs"), who understand that network performance is based not just on the parts of the networks but on how those parts work together. It has also opened doors for us to new customers in select enterprise segments, who increasingly need the kind of mission-critical networking capability that we provide. In addition, we have successfully agreed product transition plans with all major customers, and implementation is underway in many. This is a remarkable achievement, completed in well under one year.

People

Overall employee engagement scores at Nokia remained high, based on our periodic Cultural Cohesion Tracker. The tracker also pointed to the fact that the Acquisition of Alcatel Lucent created less cultural conflict than might have been expected given the history of acquisitions in our sector. During the year, we also launched a revitalized effort to improve our gender balance within the company. I am confident that we are gaining momentum and within the next two years we will start to see some positive change.

Net Sales in 2016

EUR 23.6bn

Proposed dividend per share

EUR 0.17

Proposed dividends

EUR 972m

Innovation

We made significant progress in our aspiration to lead in 5G as we began bringing to market innovation from nearly 10 years of research at Nokia Bell Labs. We are preparing the world for 5G with the industry's best evolutionary path from 4G to 4.5G to 4.5G Pro to 4.9G and finally 5G.

We set records for fiber-like speeds over copper with XG-Fast, delivering 8 gigabits per second in a test with Australia's National Broadband Network. Our new optical chip sets enabled us to deliver a transmission speed of 1.2 terabits per second over optical fiber in Africa's first field trial of optical communications technology. In New Zealand, we delivered 200 gigabits per second on a single wavelength over a single fiber.

We introduced our intelligent management platform for all connected things ("IMPACT") to help our customers deploy new services for IoT applications. Our Nuage SDN platform gained traction helping businesses move to the Cloud, and we continued our development of Cloud service orchestration and network security.

Nokia Bell Labs moved forward with its Future X projects, shaping the network of the future—massively distributed, cognitive, continuously adaptive, learning and optimizing.

Sustainability and corporate responsibility

Reducing our carbon footprint and helping our customers do the same is at the center of our sustainability objectives, as is doing business with integrity. The high standards of our Code

of Conduct allow us to build and maintain personal integrity across the company and protect our reputation. We work hard to ensure the technology we provide is not used to infringe human rights and conduct robust on-site assessments of our suppliers, as well as using the EcoVadis scorecards, to ensure they meet our high ethical standards. Our customers also use these very same scorecards to assess our sustainability performance.

In 2016, we made progress in the EcoVadis framework in areas of environment, labor practices, and supply chain management. We were judged “Outstanding”, the highest gold recognition level, with a score of 85/100 putting us in the top 1% of all suppliers assessed. Our total energy consumption across our facilities decreased by approximately 9% compared to 2015, which reflected a decrease of approximately 16% in our greenhouse gas emissions, including our renewable energy usage. The 2016 figures are compared to the combined figures of Nokia and Alcatel Lucent in 2015. In 2016, we retained our listing in the Dow Jones Sustainability Index with a score of 83/100, and were ranked the leader of the CMT Communications Equipment sector.

Cost reductions

With the Acquisition of Alcatel Lucent, we committed to reduce costs by EUR 1.2 billion in full year 2018. We are progressing well towards this goal and, in 2016, we were ahead of plan. I would note that delivering against this commitment has required and will require us to reduce the number of employees as we eliminate overlaps and use best practices from both Nokia and Alcatel Lucent to find new areas of efficiencies. These reductions are never easy and do not reflect the quality of the people who had to leave the company. Throughout the process, which will continue until the end of 2018, we have sought to provide support for those people and to treat them with dignity and respect.

Strategy

Finally, we announced our new strategy and made good progress on execution against four strategic priorities.

Our first strategic priority is to lead in high-performance end-to-end networks with our communication service provider customers. We ended the year with a leading position in LTE, service provider IP edge routing, copper access and services.

To maintain these leadership positions, we launched compelling 4.5G Pro and 4.9G solutions, giving operators the ability to continue to meet capacity demands now while

“The operational foundation we now have in place, together with our financial strength and our disciplined, results-focused culture, have put us in a much stronger position to capitalize on our bigger portfolio and customer set, to tap the greater number of paths available to us for growth and expansion, and to be the innovation leader that enables our connected lives.”

transitioning to 5G in the future. We acquired Gainspeed, giving us a compelling entry into the DOCSIS (*Data Over Cable Service Interface Specification*) world of cable operators. We also made several other acquisitions designed to expand our capabilities in areas such as big data analytics for network and service automation and network security.

Our second priority is to expand network sales to select vertical markets, specifically energy, transportation, public sector, technical extra-large enterprises (“TXLEs”), and webscale players (“Webscales”) such as Google and Amazon. We saw good momentum in the year in several of these areas, such as building an LTE public safety network in Dubai with our partner Nedaa, IP backbone and network modernization for rail operators such as the S-Bahn in Berlin, and private LTE networks for utilities and mining with major players like Rio Tinto. We see strong future opportunities in all targeted segments.

To tap this opportunity, we are investing where it is needed, including focusing our sales force, and making strategic acquisitions such as Deepfield, a United States-based leader in big data analytics to extend our reach into webscale and large enterprise customers.

Building a strong standalone software business is our third strategic priority, and in 2016 we made good progress, expanding our current business with communication service providers and expanding to enterprises and IoT platforms. We enhanced our IMPACT platform to help our customers deploy new services and lines of business, such as smart parking, smart lighting, and transportation and automotive. Our planned acquisition of Comptel accelerates our plans for a standalone software business. Comptel’s service orchestration portfolio, when combined with Nokia’s Service Assurance and our Cloudband and Nuage portfolios, enables

us to provide our customers with complete end-to-end orchestration of complex Network Function Virtualization (“NFV”) and SDN deployments.

Finally, our fourth strategic pillar—to create new business and licensing opportunities in the consumer ecosystem—gained strong momentum. Our patent licensing business has also progressed, adding more licensees as well as concluding our arbitration and agreeing an expanded licensing deal with Samsung. We also entered into a brand licensing agreement with HMD Global, which has already launched its first Nokia-branded smartphones. We accelerated our Digital Health business with the acquisition of Withings, and continued to gain momentum in OZO camera sales and in taking steps to see our VR video and audio become embedded in the VR ecosystem. Our primary interest in this area continues to be in developing technology that we can license to other parties and in refreshing our patent portfolio.

These are truly exciting times at Nokia. We came a long way in 2016 and have plenty of opportunities in our future.

Even if our business has changed massively, our culture remains uniquely Nokia. We are driven to win, focused on shareholder value, but always guided by our strong core values and deep commitment to ethics and integrity. We remain true to our vision to expand the human possibilities of the connected world, creating new and extraordinary experiences in people’s lives through technology that is grounded in real human needs. To that purpose we are dedicated, ready, and ideally placed to succeed.

Rajeev Suri
President and CEO

Our role as a global technology leader

Our vision is to enable the human possibilities of the connected world.

We are innovators of the global nervous system, shaping the future of technology to transform the human experience

Innovating this global nervous system is a role that Nokia is uniquely well placed to play. Our business today is not just focused on meeting extraordinary technological demands, but also on how technology is deployed and used. With the potential of Augmented Intelligence, increasing human and machine interaction, and a supercomputer in every pocket, we believe that current trends will have significant implications for society.

We are shaping a new revolution in technology

We are shaping a new revolution in technology, where intelligent networks augment and aid our daily lives through sensing the world around us and providing the data and analytics needed to make choices that help society thrive. We are innovating this global nervous system with effortless, simple and dependable technology for the IoT, ultra-broadband, Cloud, IP interconnectivity, digital health and immersive VR technologies.

We enable innovative and compelling business models, applications and services

With the advent of new technologies such as the IoT, 5G and Cloud, we believe that enabling new business opportunities for our customers is the key to their rapid transition to new digital networks, capitalizing on the inherent operational benefits of this technology, and generating new services.

We assist our customers in identifying compelling cases for new revenue streams, in addition to enabling the rapid onboarding of new applications and services, scalability and operational efficiency.

We optimize performance to maximize value and customer satisfaction

We believe that agility in today's fast and constantly evolving marketplace is no longer just an advantage—it is a vital necessity. Agile principles, lean practices and innovative tools are required to successfully survive in the new digital world and enable continuous improvement in quality, value and customer satisfaction.

We enable our customers to move away from an economy-of-scale network operating model to demand-driven operations. We do this by providing the easy programmability and flexible automation needed to support dynamic operations, reduce complexity and improve efficiency.

As a result, our customers can fulfill end user demands—when and where they are needed—by provisioning services in real time while automatically making optimal use of networks assets.

We create disruptive solutions enabling market differentiation and competitive advantage

We believe that innovation is the foundation of everything we do at Nokia. We force the pace of change by pushing technology boundaries, challenging the status quo and working in open collaboration with customers and partners on the next "big idea." It is through these efforts that Nokia expands and enhances its portfolio, introduces disruptive technologies and identifies new market opportunities for its customers.

We are continually evolving the Nokia portfolio: adding and combining functionality, making it more intuitive and simpler to use. Doing this helps our customers evolve their networks. For instance, by taking the first step towards entering the IoT space with our IMPACT solution; or the next step to transition from LTE to 5G using 4.5G Pro and 4.9G; or perhaps the ultimate step to creating immersive experiences with our OZO VR camera.

It is through innovation that we create paths for our customers—whatever their starting point—to reach the promising new digital world.

Our values



We foster a culture of high performance and high integrity, guided by our vision, brand and values.

It is through our people and culture that we shape technology to serve human needs. Our pursuit of performance with integrity and sustainability—a culture that stems from our Finnish roots—is key to why our customers and partners choose to work with us.

Operational excellence is the cultural platform we use to pursue Nokia's core purpose as a company. It means relentlessly pursuing financial performance by delivering on our end-to-end strategy. It informs our quest for innovation, as we use our insatiable curiosity and deep technical knowledge to share the future for our customers. It also drives our pursuit of continuous improvement, not only over earlier performance, but also in our ability to outperform competitors and be a trusted partner for customers, partners and suppliers.

We pursue high performance, always under the guiding principles of our values:

Respect

Acting with uncompromising integrity, we work openly and collaboratively, seeking to earn respect from others.

Challenge

We are never complacent, ask tough questions, and push for higher performance to deliver the right results.

Achievement

We take responsibility, and are accountable for driving quality, setting high standards, and striving for continuous improvement.

Renewal

We constantly refine our skills, learn and embrace new ways of doing things, and adapt to the world around us.

Our commitments

What we do to design and deploy technology in the service of people

We create the most sophisticated technology that is effortless and intuitive to use

We lead the relentless quest for gains in performance and agility, with technology that thinks for itself.

We solve your future needs

We help customers shape their futures based on a clear view of technology opportunities and constraints. We work closely with customers and partners to anticipate their priorities and guide their choices.

We obsess about integrity, quality, and security

We never compromise our values in the drive for business or technical performance. We pursue quality in all our products and processes, and design for security and privacy from the start.

Our strategy



We are rebalancing for growth, putting Nokia at the heart of unprecedented technology demands as innovators of the global nervous system.

The vision of the Programmable World continues to guide our corporate strategy. We have identified six global megatrends that drive the Programmable World. These megatrends create massive technological requirements, impact our current and potential customers, change the lives of people and impact business operations on a global scale and ultimately provide opportunities for Nokia to diversify into new growth areas.

The megatrends we have identified are:

- 1. Network, compute and storage:** Ever present broadband capacity coupled with a distributed Cloud for ubiquitous compute and near infinite storage, allowing limitless connectivity and imperceptible latency
- 2. Internet of Things:** In addition to people, trillions of things are connected to the internet, collecting unprecedented amounts of data in a private and business context
- 3. Augmented Intelligence:** New tools transform the collected data into actionable insights, fundamentally changing the way decisions are made by businesses, governments and individuals, resulting in time savings, less waste, higher efficiency and new business models
- 4. Human and machine interaction:** A range of new form factors that fundamentally transform the way humans interact with each other and with machines, e.g. voice-based digital assistance, gesture control, smart clothes, implantable chips, robotics and Augmented and Virtual Reality

5. Social and trust economics: Ubiquitous connectivity, compute and storage, as well as technologies such as block chain, enabling new business models based on sharing assets and distributed trust, allowing rapid scalability on a global level

6. Digitization and ecosystems: Next level of digitization beyond content and information, digitizing atoms with additive printing in an industrial, consumer and medical context, fundamentally transforming production processes

These megatrends are driving massive new technology requirements, and end-to-end networks are a central enabler for all aforementioned megatrends, which create a multitude of opportunities for us. Nokia Bell Labs has developed a vision of a future network architecture that fulfills all of these requirements in a holistic way—the Future X network vision. This is our guide not just to how things will change, but also to what we need to do to meet the future needs of our customers and to address these megatrends. The Future X vision encompasses the key domains of future networks: massive scale access, converged edge cloud, smart network fabric, universal adaptive core, programmable network operating systems, augmented cognition systems, digital value platforms and dynamic data security.

Simultaneously, driven by the identified megatrends and the increasing relevance of networks, we are seeing a shift in who is investing in technology. Our primary market, comprised of CSPs, in which we have a leadership position, is expected to remain challenging with a limited estimated growth opportunity over the next five years. However, the megatrends are increasing the demand for large high-performance networks in other key areas, which we define as our select vertical markets. Webscale companies—such as Google, Microsoft, and Alibaba—are investing in Cloud technology and network infrastructure on an increasing scale. As other vertical markets such as energy, transportation and government digitize their operations, they will need massive mission-critical networks. The same is true for TXLEs—technically sophisticated companies, such as banks, that invest heavily in their own network infrastructures to gain a key competitive advantage. Consequently, we have identified attractive growth opportunities in new domains outside our primary market with CSPs, which remains a significant market.

We are addressing both our primary CSP market and the newly identified growth opportunities in our adjacent market with our “Rebalancing for Growth” strategy. This strategy builds on our core strength of delivering large high-performance networks by methodically expanding our business into targeted, higher-growth and higher-margin vertical markets. Our ambition is to grow the share of our revenue that is derived from outside the CSPs.

Our strategy continued

Our four pillars

This strategy builds on our business portfolio and continued drive to design technology that serves people and includes the following four key priorities:



Lead in high-performance, end-to-end networks with CSPs

Nokia is a leader in this area today and we will use our main competitive advantage—a near 100% end-to-end portfolio that we can deliver on a global scale—to maintain our leadership while managing for profitability. Within this first priority, we are focused on:

- monetizing additional waves of 4G and establishing leadership in 5G by being first to market with key customers and global technology leadership;
- maintaining our leading market share in copper access, accelerating momentum in fiber access, successfully entering the cable market, and developing new smart home solutions;
- leveraging our superior products to expand in both edge and core routing, where we have a fully virtualized portfolio that is differentiated by performance, flexibility, and quality;
- using our unique capability of offering optical and routing that work together, a capability that is increasingly becoming a customer requirement; and
- delivering cost savings by realizing synergies and applying best practices across our entire portfolio to maintain the industry's most profitable networks business.

Over the next two years, we intend to maintain our leading position with CSPs, while establishing ourselves as a credible and recognized player in our target vertical markets among enterprises. We strive to sustain and rebuild Nokia as a value-adding consumer brand, earning returns through both our own businesses and licensing.



2. Expand

Expand network sales to select vertical markets

We will expand into five select vertical markets with carrier-grade needs: energy, transportation, public sector, TXLEs and Webscales. As the world becomes ever more digital, the kind of massive, high-performance networks once used almost exclusively in telecommunications are now needed by other organizations. Webscale customers will increasingly require high-performance networks to improve customer experiences and to expand their primary business models.

- For Webscale companies we have identified two areas for diversification:
 - all-IP-led, with a focus on providing more IP routing and optical network infrastructure; and
 - mobile access-led, targeted at those Webscales that wish to expand into mobile access connectivity with consumers.
- In terms of select vertical markets, we have a three-pronged approach:
 - target a limited number of customer segments to ensure focus;
 - leverage our full end-to-end portfolio to increase penetration with customers; and
 - accelerate and diversify our go-to-market.

Our strategy continued

Our four pillars



Build a strong standalone software business

While Nokia has a large software business today, much of that is attached to our hardware products. Our ambition is to move beyond that approach in the medium term and ultimately to create a large global software player that has the margin profile consistent with large software companies. We have three priorities to achieve this ambition:

- generate an uplift to our business by selling software assets we have today because our software is largely network-agnostic. Fixed, cable and enterprise customers are targets for expansion;
- market our current software to select vertical markets. Some of our software assets today are highly relevant for our select vertical markets. For example, Webscales can benefit from Nokia's Operations Support Systems, Service Assurance to enable high-performance IT networks, and inter-data center connections; and
- assess where we are able to expand into enterprise software and IoT platforms, where our experience in providing mission-critical networks and services at scale is a powerful differentiator.



Create new business and licensing opportunities in the consumer ecosystem

In addition to renewing existing patent licenses on favorable terms, our aim is to add new licensees from the mobile industry, and we continue to expand patent licensing into new segments, such as automotive and consumer electronics. Our brand licensing efforts are well underway—we see value creation opportunities in the mobile devices industry leveraging our strong brand. Our exclusive brand licensee for mobile phones and tablets, HMD Global, has already launched new Nokia branded feature phones and smartphones.

In addition to our licensing businesses, we intend to return to the consumer market with two select new businesses in Digital Media and Digital Health. Our current focus in the fast-growing area of VR is to expand the range of OZO cameras as part of creating an industry-leading VR ecosystem. Technology licensing and strategic partnerships will form an essential element of this work, in order to accelerate VR content creation and mass adoption.

In Digital Health, we entered the market through our acquisition of Withings, a pioneer in consumer-focused connected health devices. In the future, we see opportunities to scale globally by building on the powerful reach of the Nokia brand, expanding into corporate wellness and assessing opportunities to transition into business-to-business healthcare, in areas such as connected patient care.

Our leadership

We have a strong and experienced leadership team that brings together leaders with many years of experience in telecommunications and technology, finance, sales and operations, as well as various other business disciplines.

The diversity of business backgrounds of the Nokia Group Leadership Team (the "Group Leadership Team") members has been integral to the transformation of Nokia into an industry and innovation leader in next-generation technology and services in recent years.

The Group Leadership Team is responsible for the operative management of Nokia, including decisions concerning our strategy and the overall business portfolio. The Chair and members of the Group Leadership Team are appointed by the Board. The Group Leadership Team is chaired by the President and Chief Executive Officer (the "President and CEO").



Rajeev Suri
President and CEO

Samih Elhage⁽¹⁾
President of
Mobile Networks

Federico Guillén
President of
Fixed Networks

Basil Alwan
President of
IP/Optical Networks

Bhaskar Gorti
President of
Applications
& Analytics

Kristian Pullola
Chief Financial
Officer

(1) As announced on March 17, 2017, Mr. Elhage will continue as a member of the Group Leadership Team until April 1, 2017.

+ On March 17, 2017, we announced a change in our organizational structure which also impacted our Group Leadership Team effective from April 1, 2017. Refer to pages 98 to 101 for the updated composition of the Group Leadership Team and full biographies of its members.



**Hans-Jürgen
Bill**
Chief Human
Resources Officer

**Kathrin
Buvac**
Chief Strategy Officer

**Ashish
Chowdhary**
Chief Customer
Operations Officer

**Barry
French**
Chief Marketing
Officer

**Marc
Rouanne⁽²⁾**
Chief Innovation and
Operating Officer

**Maria
Varsellona**
Chief Legal
Officer

(2) As announced on March 17, 2017, Mr. Rouanne will transition to his new role as president of Mobile Networks effective from April 1, 2017.

Our businesses

We have two businesses: Nokia's Networks business and Nokia Technologies.

Within these two businesses, we had five business groups in 2016: Mobile Networks⁽¹⁾, Fixed Networks, IP/Optical Networks, and Applications & Analytics (all within our Networks business); and Nokia Technologies. This section presents an overview of Nokia's Networks business and Nokia Technologies.

Networks business

Mobile Networks

Fixed Networks

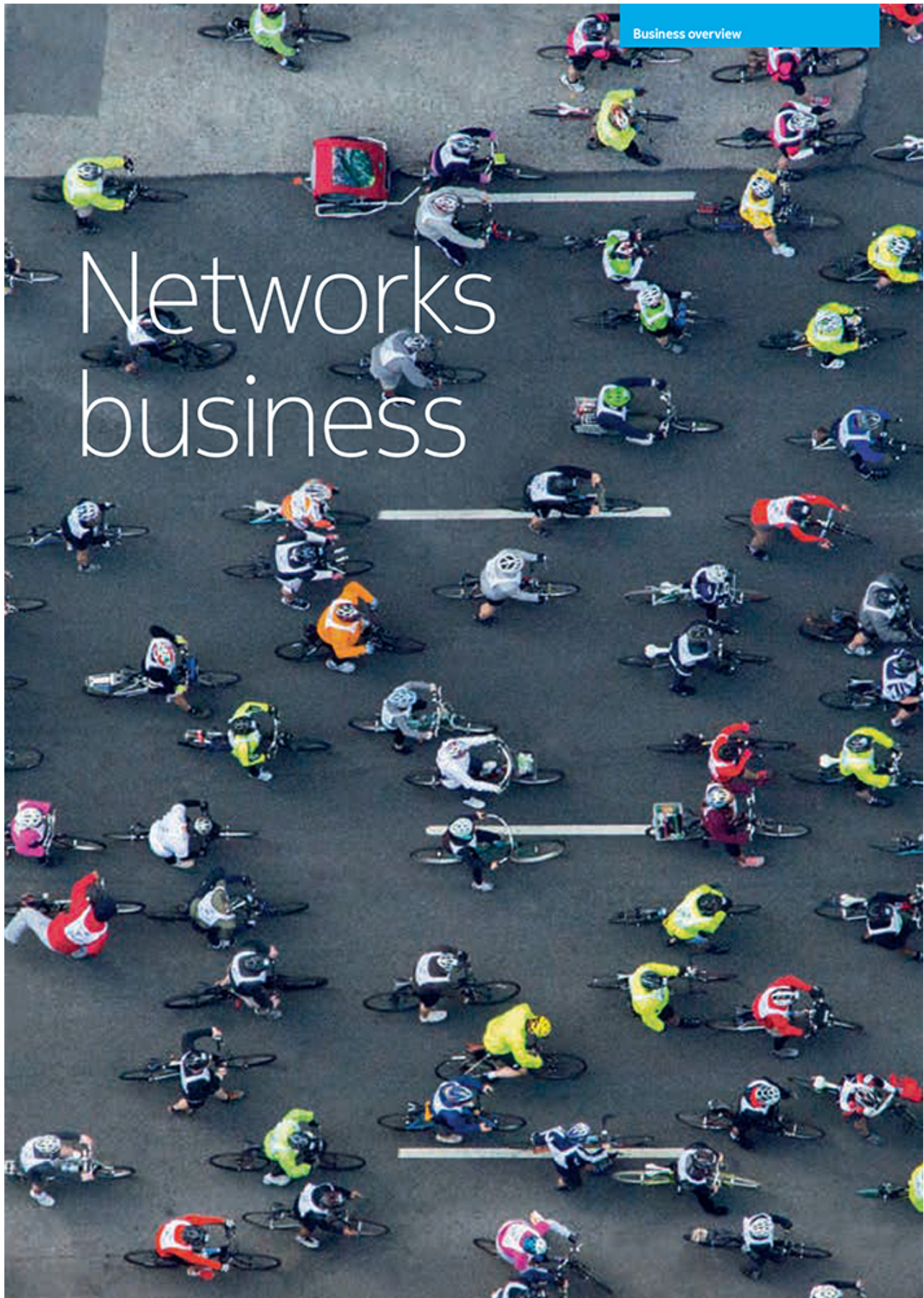
Applications &
Analytics

IP/Optical Networks

Nokia Technologies

Nokia Technologies

(1) Following the changes to our organizational structure announced on March 17, 2017, our current Mobile Networks business group will be separated into two distinct, but closely linked, organizations effective from April 1, 2017: (1) Mobile Networks, which will focus on products and solutions, and (2) Global Services which will focus on services. These changes are not reflected in the presentation of our businesses below, which reflect our organizational structure for the year ended December 31, 2016.



Networks business

Our Networks business in 2016 was conducted through its four business groups: Mobile Networks, Fixed Networks, IP/Optical Networks, and Applications & Analytics.

Market overview

Through our comprehensive end-to-end portfolio of products and services, we are addressing a market that encompasses mobile and fixed network access infrastructure, IP routing and optical networks as well as software platforms and applications.

We define our primary market as a network and IP infrastructure, software and related services market for CSPs. We estimate that our primary market was EUR 113 billion in 2016. In addition, we have an adjacent market, including a vertical market that includes our Networks businesses expansion areas in both a customer and product dimension. The adjacent market includes customer segments such as Webscales, energy, transport, public sector and TXLEs. In the product dimension, this includes solutions like Nuage Networks, SDN, Analytics, IoT and Security. The adjacent market was estimated at EUR 18 billion in 2016.

Demand for our portfolio is driven by exponentially increasing growth in data traffic as people's lives and enterprises become ever more digitized. This drives the demand for highly reliable networks for massive connectivity.

Competition

The competitors in our primary market are Huawei and Ericsson. We also compete with technology experts in some of our other market segments, such as Juniper and Cisco in the routing segment, and Ciena, Adtran, and Calix in the optical networks and fixed access segments. Both the optical networks and the applications and analytics market segments are still highly fragmented markets.

Mobile Networks

Market overview

The primary market for our Mobile Networks business group includes technologies for mobile access, converged core and microwave transport as well as related services. This encompasses access and core technologies ranging from 2G to 5G licensed spectrum for both macro and small cell deployments. The services market includes implementation, care and professional services for mobile networks in addition to managed services for both mobile and fixed networks. The primary market for Mobile Networks was estimated at EUR 64 billion in 2016.

The vertical market for Mobile Networks includes solutions for the public sector, TXLEs and Webscales, and drives expansion into domains such as IoT connectivity, LTE for public safety, private LTE and unlicensed radio access. The vertical market, including verticals, was estimated at EUR 2 billion in 2016.

Business overview and organization

Our aim is to lead with traditional telecommunications operators, as well as expand into select attractive, vertical segments. This is accomplished by delivering a comprehensive end-to-end portfolio of mobile products and services across Radio Networks, Converged Core, Advanced Mobile Networks Solutions and Global Services businesses.

Radio Networks has the task of driving leadership in radio access and specifically has end-to-end responsibility for one of the most important areas for Nokia's future: 5G. We believe that 5G will change the way in which mobile technology is used in virtually every sphere of life. As we move along the path towards making 5G a commercial reality, we aim to extend our leadership in LTE with a smooth evolution path comprising successive generations of 4.5G, 4.5G Pro and 4.9G offerings. Mobile Networks' rationalized portfolio, featuring the 5G-ready AirScale radio access, is setting the standard for scalability, openness, energy efficiency and multitechnology support ("Single RAN"). AirScale is the platform to enable 4.5G Pro/4.9G, Cloud and IoT connectivity.

The further evolution of 4G, and ultimately 5G, requires a continuous transformation of the core network. Mobile Networks' Converged Core is designing a radically simplified, robust and scalable core network based on its concept of a Cloud Native Core. Mobile Networks is already executing on this path and distinguishing its offer through its superior Shared Data Layer and AirFrame data center infrastructure solutions, which enable a Telco Cloud architecture that combines the best of both a centralized and a distributed approach. Using truly open interfaces and open source software building blocks, Mobile Networks can provide excellent performance for its customers in and beyond traditional telecommunications operators. Mobile Networks aims for a leading market position in end-to-end IP multimedia subsystem ("IMS")/voice over LTE ("VoLTE"), subscriber data management and other virtualized software infrastructure solutions, putting together the key building blocks which will enable new digital business models.



Advanced Mobile Networks Solutions spearheads Mobile Networks' expansion beyond traditional telecommunications operators to vertical markets in public safety; connectivity for IoT and connected automotive; and private LTE networks for, for example, transportation and energy companies. With a leading small cells portfolio and strong positions in unlicensed LTE and fixed wireless access—as well as innovative backhaul solutions, including a strong microwave offering—Mobile Networks aims to meet the need for increasingly dense networks to supply the capacity demands of our changing world.

Finally, through our Global Services offering, we aim to be the most innovative and complete service provider for the connected world. Our services, solutions and multivendor capabilities help our customers navigate through the evolving technology landscape, network complexity and data growth as well as improve personalized end user experience while supporting them in day-to-day network planning, implementation, operations and maintenance. We differentiate strategically through our service delivery by driving speed, quality and efficiency with the right combination of local expertise and globalized delivery centers, as well as advanced analytics, virtualization and automation using the Nokia AVA platform.

Competition

The mobile networks market is a highly consolidated market and our main competitors are Huawei and Ericsson. Additionally, there are two regional vendors, ZTE and Samsung, that operate with a below 10% market share. As network infrastructure gets virtualized and cloudified, we expect IT companies to emerge, such as HP Enterprise.

Networks business continued

Fixed Networks

Market overview

The primary market for our Fixed Network business group includes technologies for fixed access and related services in addition to fixed network transformation services with focus on transformation of legacy fixed switching networks. The primary market for Fixed Networks was estimated at EUR 9 billion in 2016. In this market, we see a shift from copper to fiber technologies. The copper market is currently stable partially due to Nokia-driven innovations that improve the performance of the existing copper networks.

The adjacent market, including verticals, for Fixed Networks includes virtualization solutions for cable access platforms, Digital Home (IoT) and passive optical LAN. The vertical market, including verticals, was estimated at EUR 3 billion in 2016, including related services.

Business overview and organization

The adjacent market, including verticals, for Fixed business group provides copper, fiber and coax access products, solutions and services to deliver more bandwidth to more people, faster and in a cost-efficient way. The portfolio allows for a customized combination of technologies that brings fiber to the most economical point for our customers. It consists of advanced copper-based solutions to boost capacity on existing copper infrastructure, such as VDSL2 Vectoring, Vplus and G.fast.

The Fixed Networks business group is also a leader in fiber-to-the-home solutions, such as Ethernet point-to-point, and all versions of Passive Optical Networks ("PON"), including EPON and GPON, as well as 10 gigabit next generation fiber technologies (XGS-PON and TWDM-PON). Together with Nokia Bell Labs, we continue innovation and development of even higher-capacity technologies like XG-Fast, which allows 10 Gb/s over copper, and XLG-PON enabling 40 Gb/s symmetrical bandwidth over fiber.

With our acquisition of Gainspeed, a California-based start-up specializing in DAA solutions for the cable industry via its Virtual Converged Cable Access Platform ("Virtual CCAP") product line, we have complemented our fiber access technologies for cable multiple-system operators. With this enhanced product portfolio, we provide cable operators with the end-to-end technology capabilities needed to support growing capacity requirements today and into the future. With this acquisition, we are able to offer a turnkey solution for the cable industry that includes products for routing, transport, wireless and analytics.

Additionally, our smart home solution supports digital home devices that enable communication providers to provide enriched customer experiences and diversify their offering.



The Fixed Networks services portfolio is based on our unparalleled expertise and experience and is comprised of deployment, maintenance and professional services such as copper and fiber broadband evolution, public switched telephone network transformation, ultra-broadband network design, deployment and operation, site implementation and outside plant, as well as multivendor maintenance.

Competition

The competitive landscape in fixed access has similar characteristics to the mobile access where the market is dominated by three main vendors, Huawei, Nokia and ZTE and a handful of other vendors with less than 10% market share.

IP/Optical Networks

Market overview

The primary market for our IP/Optical Networks business group includes routing and optical technologies and related services sold to CSPs. This market includes technologies such as IP edge and core routing, mobile packet core and Wave Division Multiplex and Optical Multi-Service Network solutions. The primary market for IP/Optical Networks was estimated at EUR 28 billion in 2016.

A significant portion of IP/Optical Networks revenue is derived from its vertical market, which includes customer segments like Webscales, energy, transport, public sector and TXLEs. We have also included technologies like SDN controllers, addressed with our Nuage portfolio, in this market. The vertical market was estimated at EUR 6 billion in 2016.

Business overview and organization

The IP/Optical Networks business group provides the high-performance and massively scalable networks that underpin the digital world's dynamic interconnectivity. IP/Optical Networks portfolio of carrier-grade software, systems and services play across multiple domains, from programmable IP and optical transport networks for the smart fabric to software-defined capabilities for the programmable network operating system and more.

The networks of CSPs are under tremendous pressure from Cloud-based applications, ultra-broadband evolution and the IoT. IP/Optical Networks solutions reduce CSPs time-to-market and risk in launching new services, enabling rapid scaling to meet surging demands in the most optimized configurations. The solutions further assure that network services are delivered with consistent quality, reliability and security and that restorative actions are automatically initiated when any parameter varies beyond set limits. These carrier-grade attributes also benefit—and are valued by—the needs of vertical markets including internet content providers, public sector and verticals, and TXLEs.

The IP/Optical Networks product portfolio includes:

- comprehensive IP and optical Wide Area Networking ("WAN") solutions that dynamically, reliably and securely connect people and things from any technology modality to any Cloud at the lowest cost-per-bit;
- advanced, Cloud-optimized IP service gateways for residential, business, mobile and IoT services and unique hybrid solutions enabling a converged services future;
- carrier SDN solutions for network management that dynamically provision, optimize and assure network services and resources end-to-end, from access to the Cloud, and spanning IP and optical technology layers;



- advanced datacenter automation and software-defined WAN solutions that configure network connectivity among Clouds and to any enterprise branch office with the ease and efficiency of Cloud compute using products from our Nuage portfolio;
- advanced IP video services offering the utmost user experience streamed efficiently and flawlessly from the Cloud; and
- an extensive portfolio of professional services to accelerate the benefits of integrating new technologies to transform networks and leverage the latest innovations in SDN, virtualization, video and programmable all-IP networks.

Competition

The competitive landscape is dominated by Cisco, Juniper, Huawei and Nokia in addition to various specialized players in optics such as Ciena.

Networks business continued

Applications & Analytics



Market overview

The Applications & Analytics market is focused on software platforms and applications that help CSPs to optimize their operations, monetize services and improve customer experiences. Applications & Analytics' primary businesses include Business Support Systems ("BSS"), Operational Support Systems ("OSS") and Service Delivery Platforms ("SDP"). The primary market for Applications & Analytics and associated professional services was estimated at EUR 12 billion in 2016.

The adjacent market, including verticals, for Applications & Analytics includes emerging software and services for Self-Organizing Networks ("SON"), Cloud, Analytics, Security and IoT. From a customer perspective this market also includes Webscales, digital enterprises and IoT verticals. The adjacent market, including verticals, was estimated at EUR 6 billion in 2016.

Business overview and organization

The Applications & Analytics business group is our dedicated software business. We have long-standing positions in its primary markets: our BSS solutions support hundreds of millions of subscribers and manage over 1.5 billion devices each day; we lead in LTE network management; we have thousands of OSS deployments with differentiated capabilities in service assurance, automation, analytics and Cloud; and our Session Border Controller, a SDP that secures network borders and connects an exploding number of devices, stands out for its virtualization capabilities.

These markets are being reshaped by four trends: the transition to the Cloud, the growth of the IoT, the increased need for security and privacy, and the impact of augmented intelligence and machine learning. These trends impact the way networks will operate, how new services and business models will be monetized, how customer expectations will evolve and the speed at which CSPs and TXLEs will need to innovate.

The Applications & Analytics business group is driving an aggressive innovation agenda that includes an Emerging Business unit that is developing software for IoT, security, Cloud, SON, and analytics. These advances are helping our customers:

- modernize BSS systems to rapidly launch and monetize new IoT and Cloud services;
- improve customer experiences with rich analytics and machine learning;
- operate larger networks and more services with fewer staff through virtualization and automation;
- predict issues before they happen with augmented intelligence;

- scale IoT services with a platform that handles data collection, event processing, device management, data contextualization, data analytics, and end-to-end security;
- increase the success of digital transformations with improved processes, collaboration and profitability; and
- secure services and data with confidence.

Growing this business into a standalone software business at scale is a key tenet of our strategy. Please refer to "—Our strategy" for more information on our strategy.

Competition

The Applications & Analytics business group operates in a highly fragmented market in which very few players have a market share above 10%. Our main competitors are Ericsson, Huawei, Amdocs, Oracle, HPE, Cisco and Netcracker.

Within our Networks business

Services

Our Services are focused on developing innovative services, solutions and multivendor capabilities around the mobile, fixed and IP networks and beyond. With our full service portfolio we address the current and future needs of our customers, including network operators, public sector, TXLEs and transportation. Customer satisfaction, quality and efficiency are key in service delivery. To achieve that, we leverage a combination of local engagement with the customers, the network of Global Delivery Centers, and Nokia AVA, the next-generation delivery platform. Altogether, our service portfolio and delivery are powered by 38 000 services experts around the globe.

Sales and marketing

The Customer Operations (“CO”) organization is responsible for sales and account management across the four network-oriented business groups. The CO teams are active in approximately 130 countries to ensure that we are close to our customers, both physically and in terms of understanding the local markets, thus helping us build and maintain our customer relationships. Refer to “General facts on Nokia—Production of infrastructure equipment and products” for more information on our manufacturing facilities globally.

The CO organization is divided into seven markets:

- **Asia-Pacific and Japan** spans a varied geographical scope, ranging from advanced telecommunications markets, such as Japan and the Republic of Korea, to developing markets including Bangladesh, Myanmar and Vietnam. We work with leading operators in the market, including Indosat, KDDI, KT, LG Uplus, NBN Australia, NTT DoCoMo, Singtel, SK Broadband, SK Telecom, Smartfren, SoftBank, Spark, StarHub, Telekom Malaysia, Telkom Indonesia, Telkomsel, VNPT and Vodafone.

We have close technology cooperation with leading operators in Korea and Japan as well as two Service Delivery Hubs located in Japan and Indonesia.

- In **Europe**, we are engaged with all the major operators, including Deutsche Telekom, MegaFon, MTS Sistema, Orange, Telefónica, Telia Company and Vodafone Group, serving millions of customers. We have extensive R&D expertise in Europe, and some of our largest Technology Centers, which are developing future mobile broadband technologies, are based in this market. We also have a Global Delivery Center and four regional Service Delivery Hubs in Europe.
- In **Greater China**, we are the number one player with headquarters outside China, and we are working with all the operators including China Mobile, China Telecom, China Tower and China Unicom. We have also extended our market presence to the public and enterprise sectors, including railways and public security. In Taiwan, we work with all major operators, including Chunghwa Telecom and Taiwan Mobile. In China, we have six Technology Centers, one regional Service Delivery Hub and more than 80 offices spread over megacities and provinces.
- In **India**, we are a strong supplier and service provider to the leading public and private operators, including Bharti Airtel, Vodafone, Reliance Jio, Idea, BSNL, MTNL, Aircel and Uninor. Collectively, our networks for these operators carry over 280 million subscribers across over 230 000 sites, and these figures are growing every day. In addition, we are a key telecom infrastructure supplier to non-operator segments, including large enterprises, utilities companies such as Tata Power and GAIL, Indian defense sector through L&T and BEL, and we are a strategic telecommunication partner for GSM-Railways technology to Indian Railways, including Kolkata Metro Railways and DMRC (Delhi Metro Rail Corporation). We have a Global Delivery Center, a Service Delivery Hub and a Global Technology Center in India.

- In **Latin America**, 16% of the population use LTE services, and high-speed fixed broadband is still in its early phase. With the aim of providing broadband services to a population of over 600 million people in the area, we supply ultra-competitive solutions to all major operators, such as América Móvil, AT&T, Oi, Telefónica, Telmex and Tim, as well as local operator groups, such as Avantel, Milicom, Nuevatel and Personal.
- In **Middle East and Africa**, we have built a position of considerable strength, working alongside leading operators such as Airtel, du, Etisalat, Maroc Telecom, Mobily, MTN, Ooredoo, Orange, OTA Djezzy, Smile, STC, Telkom, Vodacom and Zain, among our key customers in the market.
- In **North America**, we count all the major operators as our key customers. We also deliver advanced IP networking, ultra-broadband access, and Cloud technology solutions to a wide array of customers, including local service providers, cable operators, large enterprises, state and local governments, utilities, and many others. North America is also home to the company's most important and thriving innovation practices—from the renowned Nokia Bell Labs headquarters in Murray Hill, New Jersey, to the development labs of Nokia Technologies in Silicon Valley.

In addition, we have a dedicated sales organization focused on driving mission-critical communications sales to organizations outside the telecommunications operator market. This structure is targeted at allowing us to gain speed and efficiency in dealing with customer requirements and cultivating new and existing customer relationships.

The Global Enterprise and Public Sector organization focuses on four segments vertical to the telecommunications operators that require mission-critical communications networks: Public Safety, Transportation, Energy and TXLEs. This global sales organization is dedicated to serving the needs of customers such as Nedaa in Dubai, which provides telecommunication

Networks business continued

services to all specialized governmental, semi-governmental and private institutions; the Swiss railway company SBB (Swiss BundesBahn); the Swiss electricity transmission system operator Swissgrid; Smart City initiatives e.g. 'Bristol is open', which aim at exploring solutions to make cities smarter, safer and more sustainable; and name-brand banks such as BBVA and Santander that are transforming complex legacy environments into leading-edge Clouds that improve their global customer experience.

Research and development

Our Networks business is one of the industry's largest R&D investors in information communication technology and we expect it to drive innovation across telecommunications and vertical industries to meet the needs of a digitally connected world. Product development is continually underway to meet the highly programmable, agile and efficiency requirements of the next generation software-defined networks that will accommodate the IoT, intelligent analytics, and automation used to forge new human possibilities.

Our four networks-focused business groups are responsible for product R&D within the Networks business. The Networks business has a global network of R&D centers, each with individual technology and competence specialties. The main R&D centers are located in Belgium, Canada, China, Finland, France, Germany, Greece, Hungary, India, Italy, Japan, Poland, the Philippines, Portugal, Romania, the United Kingdom and the United States. We believe that the geographical diversity of our R&D network is an important competitive advantage for us. In addition, the ecosystem around each R&D center helps us to connect with experts on a global scale and our R&D network is further complemented by cooperation with universities and other research facilities.

Innovation steering within our Networks business is carried out by the Chief Innovation and Operating Office ("CIOO"). For R&D activities of our Nokia Technologies business group refer to "Nokia Technologies—Research and development". Within the CIOO, the Chief Technology Office ("CTO") and Nokia Bell Labs organization are responsible for our research agenda and research portfolio along with group services for architecture, compliance, reliability and standards. The CIOO develops disruptive technologies, incubates these technologies into novel prototype systems and solutions and then launches them through our business groups to generate growth and differentiation across our entire portfolio. The CIOO organization also steers innovation externally with customers, partners and governments, and has new solutions tested in collaboration with customers and our business groups.

In response to the six megatrends identified by Nokia as driving the Programmable World (for a more detailed description refer to "Our strategy" above), Nokia Bell Labs has defined the Future X network architecture—a massively distributed, cognitive, continuously adaptive, learning and optimizing network connecting humans, senses, things, systems, infrastructure, and processes. All of our Networks business groups—and also Nokia Technologies—are committed to this single architecture view and are developing products in their respective domains to build seamless end-to-end solutions in the future:

- Mobile Networks will enable 1 000X higher throughput, 100X lower latency, 10X peak speed, support for multiple spectrum bands and technologies by building application-aware and self-organizing networks that are ultra-secure;
- Fixed Networks will provide massive-scale, ubiquitous access, fiber-like speed over any media, and flexible software-defined access;

- IP/Optical Networks will implement terabit scale capacity, dynamic cloud-optimized smart networks and unlimited network programmability/slicing;
- Applications & Analytics will automate edge/Telco Cloud networks, and enable cognitive network operation and future enterprise interactivity, as well as provide terabit-scale automated IoT/device management contextual security; and
- Nokia Technologies will explore and innovate new digital value platforms, as well as continue to innovate professional and consumer devices and technologies, with focus on digital health and digital media.

Patents and licenses

Intellectual property assets are fundamental to Nokia, which owns a large patent portfolio of more than 26 000 patent families, originating from three distinct organizations (Nokia Technologies, Nokia Solutions and Networks and Alcatel Lucent). The Patent Business in Nokia Technologies is the primary monetization entity for patent assets. Refer to "Nokia Technologies—Patents and licenses" for a description of the patent licensing activities of Nokia Technologies.

Our Networks business, including Nokia Bell Labs, generates valuable patents from their industry leading R&D in fields, such as wireless, IP networking, ultra-broadband access and Cloud technologies and applications.

Our patent portfolio includes high-quality standard-essential patents ("SEPs") and patent applications which have been declared to the European Telecommunications Standards Institute and other Standards Developing Organizations as essential to standards including LTE, WCDMA, GSM and other standards. We continue to drive new patent generation.

Our Networks business has patent license agreements in place with a number of third parties as part of its ordinary course of business.

Nokia Bell Labs

Nokia Bell Labs is the world-renowned industrial research and innovation arm of Nokia. Over its 90-year history, Nokia Bell Labs has invented many of the foundational technologies that underpin information and communications networks and all digital devices and systems. This research has resulted in eight Nobel Prizes, two Turing Awards, three Japan Prizes, a plethora of National Medals of Science and Engineering, as well as an Oscar, two Grammys and an Emmy award for technical innovation. Nokia Bell Labs continues to conduct disruptive research focused on solving the challenges of the new digital era, defined by the contextual connection and interaction of everything and everyone.

Nokia Bell Labs searches for the fundamental limits of what is possible, rather than being constrained by the current state of the art. It looks to the future to understand essential human needs and the potential barriers to enabling this new human existence. It then uses its unique diversity of research intellects and disciplines and perspectives to solve the key complex problems by discovering or inventing disruptive innovations that have the power to enable new economic capabilities, new societal behaviors, new business models and new types of services—in other words, to drive technological revolutions.

Research at Nokia Bell Labs is focused on key scientific, technological, engineering or mathematical areas which require 10x or more improvement in one or more dimensions. It then combines these areas of research into the Future X network architecture, which brings these disruptive research elements together into industry-redefining solutions. These innovations are brought to market through our business groups or through technology and patent licensing. Nokia Bell Labs also engages directly with the market and customers through its consulting service to help define the path to the future network with business model innovation and the optimum techno-economics.

This model of defining future needs and inventing game-changing solutions to critical problems while advising the market on the path forward has been the constant mission of Nokia Bell Labs.



Nokia Bell Labs and Alcatel-Lucent Submarine Networks achieved **65 Tb/s transmission record** for transoceanic cable systems using Bell Labs' new Probabilistic Constellation Shaping ("PCS") technology, a ground-breaking new modulation technique that maximizes the distance and capacity of high-speed transmission in optical networks.

Nokia Bell Labs, Deutsche Telekom T-Labs and the Technical University of Munich achieved a **1 Tb/s transmission rate** over optical fiber using Bell Labs' Probabilistic Constellation Shaping technology to provide greater flexibility and performance enabling optical networks to operate closer to the Shannon limit to meet growing consumer and business data demands.

Nokia Bell Labs achieved the world's first **10 Gb/s symmetrical data speeds** over traditional cable access networks using XG-CABLE that is based on unique access technology innovations and applications developed by Nokia Bell Labs.



Nokia Technologies

Nokia Technologies is an engine of growth and innovation for Nokia.

Nokia Technologies develops advanced consumer and professional technology products in Digital Health and Digital Media, and licenses our industry-leading innovations as well as the Nokia brand for mobile devices. Nokia Technologies is determined to explore, discover and develop the ways in which technology can transform our lives. Whether taking steps towards a healthier life or sharing experiences like never before, Nokia Technologies makes our vision for a connected future your reality for today. Nokia Technologies' mission is to create effortless and impactful technological products and solutions that expand human possibilities.

Market overview

Nokia Technologies is driving innovation and product development in two key growing sectors of consumer technology—VR and digital health—as well as overseeing the reintroduction of the Nokia brand to handsets through a licensing agreement with HMD Global and the expansion of our patent licensing business based on decades of innovation and R&D leadership in enabling technologies used in virtually all mobile devices used today.

The market for VR products and technologies remains at a very early stage, with estimates of the total market as high as EUR 65 billion by 2020, with significant growth expected over the next five to ten years. We believe the solutions we develop today, the standards we establish and the patents associated with them, will position us as a leading player in this market as adoption grows in products as well as in technology licensing.

The global digital health market is expected to grow exponentially over the next five to seven years, up to EUR 220 billion by 2020. Within that market, we are focused on the segments fueling the most significant growth: 1) connected devices that go beyond trackers and smart watches to include scales and blood pressure monitors; and 2) remote patient monitoring.

Smartphones, feature phones, and tablets had a global estimated market of over EUR 400 billion in 2016, accounting for nearly 40% of the total consumer electronics segment. In the automotive industry, expectations are that around half of the approximately 100 million new cars sold annually around the world will have connectivity in the next five years.

Business overview and organization

Nokia Technologies consists of a portfolio of four growing businesses.

In Digital Media, we are pioneers of the technology enabling VR, an exciting new medium that is transporting people to places, events and experiences like never before.

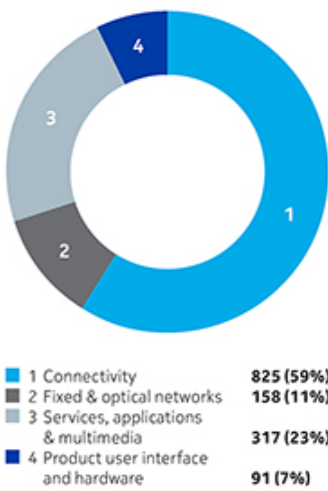
In Digital Health, we are entering the market through our acquisition of Withings with a portfolio of premium, intuitive products designed to inspire the individual to take control of their own health.

We have established a brand licensing business, and our exclusive brand licensee for mobile phones and tablets, HMD Global, has already launched new Nokia branded feature phones and smartphones.

Nokia Technologies continues to grow its successful patent licensing business, which drives most of its revenue today, giving us the ability to invest in our new businesses in a disciplined, venture capital-like manner.

Nokia Technologies continued

Breakdown of patent filings in 2016 by technology



Sales and marketing

Nokia Technologies has significant ongoing R&D activities and an established patent licensing business. Nokia Technologies manages intellectual property as a technology asset and seeks a return on its investments by making its innovations available to the markets through licensing activities and transactions. Nokia Technologies currently has more than 100 licensees, mainly for our SEPs. Nokia Technologies is actively engaged in sales and marketing in support of the OZO VR camera and related technology solutions that enable fully immersive audio and video experiences.

Nokia Technologies is also engaged in sales and marketing activities to support the Withings portfolio of connected health products in global markets, which span the regulated and non-regulated segments of the market.

Nokia Technologies introduced the OZO VR camera and related technologies including the OZO Live solution in the United States, European and Asian markets in 2016 and is engaged in marketing these solutions to professional content creators in industries including film and entertainment, music, sport, news, travel and education.

Nokia Technologies sees further opportunities in licensing its proprietary technologies, intellectual property and brand assets into telecommunications and vertical industries.

Research and development

The applied nature of our R&D in Nokia Technologies has resulted in various relevant and valuable inventions in areas that we believe are important for emerging consumer experiences in the Programmable World, such as underlying connectivity and sensing technologies, as well as codecs for VR video and audio and advanced machine learning-based health analytics.

Nokia Technologies has R&D centers in Finland, France, the United Kingdom and the United States.

Patents and licenses

For more than 20 years, we have defined many of the fundamental technologies used in virtually all mobile devices and taken a leadership role in standards setting. As a result, we own a leading share of essential patents for GSM, 3G radio and 4G LTE technologies. These, together with others for Wi-Fi and video standards, form the core of our patent portfolio for monetization purposes. As mentioned above, Nokia Technologies currently has more than 100 licensees, mainly for our SEPs.

With the acquisition of Nokia Siemens Networks ("NSN") in 2013 and the Acquisition of Alcatel Lucent, we have added the results of their sustained innovation, including that of Nokia Bell Labs, creating a larger and more valuable IP portfolio than ever before. The portfolio spans more than 26 000 patent families, built on combined R&D investments of more than EUR 119 billion over the last two decades.

We continue to refresh our portfolio from R&D activities across all of our businesses, filing patent applications on more than 1 300 new inventions in 2016. Continuing our focus on communications standards, we also expect to have a leading position in 5G. In 2016, we were a leading contributor to the development of 5G standards. As part of our active portfolio management approach, we are continuously evaluating our collective assets and taking actions to optimize the size of our overall portfolio while preserving the high quality of our patents.

Competition

While several major technology companies are entering the VR market, it is still nascent, and long-term trends for capture and playback solutions have not yet been identified. We expect opportunities for technology licensing within the VR ecosystem to grow over time.

In Digital Health, we are focused on high growth segments of the total market, including consumer products in both regulated and non-regulated markets, and going beyond fitness trackers to blood pressure monitors, scales and thermometers, as well as remote patient monitoring. In this area, Koninklijke Philips N.V. (Philips) is most notable for its competing products. While Fitbit is primarily focused on fitness trackers, they have also pointed to the broader digital health value proposition as part of their evolution.

Number of new filings in 2016

1300+

R&D investment over the last two decades

~EUR119bn

Number of patent licensees

100+



Operating and financial review and prospects



Operating and financial review
and prospects

Contents

- [Principal industry trends affecting operations](#)
- [Business-specific trends](#)
 - [Networks business](#)
 - [Nokia Technologies](#)
 - [Trends affecting our businesses](#)
- [Results of operations](#)
 - [Continuing operations](#)
 - [Discontinued operations](#)
- [Results of segments](#)
 - [Networks business](#)
 - [Nokia Technologies](#)
 - [Group Common and Other](#)
- [Liquidity and capital resources](#)
 - [Financial position](#)
 - [Cash flow](#)
 - [Financial assets and debt](#)
 - [Capital structure optimization program](#)
 - [Structured finance](#)
 - [Venture fund investments and commitments](#)
 - [Treasury policy](#)
- [Material subsequent events](#)
- [Sustainability and corporate responsibility](#)
 - [Managing sustainability](#)
 - [Improving people's lives through connectivity](#)
 - [Protecting the environment](#)
 - [Running our business with integrity](#)
 - [Respecting our people](#)
 - [Making change happen together](#)
- [Employees](#)
- [Dividend](#)
- [Risk factors](#)
- [Shares and share capital](#)
- [Board of Directors and management](#)
- [Articles of Association](#)

Principal industry trends affecting operations

Business-specific trends

Networks business

We are a leading vendor in the network and IP infrastructure, software, and related services market. We provide a broad range of different products, from the hardware components of networks used by network operators and increasingly by customers in other select verticals, to software solutions supporting the efficient interaction of networks, as well as services to plan, optimize, implement, run and upgrade networks. Our Networks business is conducted through four business groups: Mobile Networks, Fixed Networks, IP/Optical Networks and Applications & Analytics. These business groups provide an end-to-end portfolio of hardware, software and services to enable us to deliver the next generation of leading networks solutions and services to our customers. We aim for all four business groups to be innovation leaders, drawing on our frontline R&D capabilities to deliver leading products and services for our customers, and ultimately ensure the company's long-term value creation. For more information on the Networks business refer to "Business overview —Networks business" above.

Industry trends

The networks industry has witnessed certain prominent trends in recent years, which have also affected our Networks business. First, the increase in the use of data services and the resulting exponential increase in data traffic has resulted in an increased need for high-performance, high-quality and highly reliable networks. The continuing increase in data traffic has, however, not been directly reflected in operators' revenue. Consequently, there is an increased need for efficiency for both operators and network infrastructure and services vendors.

Second, we are witnessing more operator consolidation driven by operators' needs to provide a wider scope of services, especially through the convergence of disparate network technologies across mobile, fixed, and IP and optical networks. In order to improve networks in terms of coverage, capacity and quality, network operators are continuing their transition to all-IP architectures, with an emphasis on fast access to their networks through copper, fiber, LTE and new digital services delivery. We are also seeing similar trends with cable operators, who are investing in the deployment of high-speed networks. Both the fixed mobile convergence and the transition to all-IP architectures were major rationales behind our Acquisition of Alcatel Lucent and creating our end-to-end portfolio of products and services.

Third, we see an increasing demand for large high-performance networks in some key areas outside the traditional CSPs space, which we define as our select vertical markets. Webscales—such as Google, Microsoft and Alibaba—are investing in Cloud technology and network infrastructure on an increasing scale. In addition, other vertical markets such as energy, transportation, government and TXLEs are investing in their own network infrastructure, to connect data centers and provide seamless IP interconnection and digital services delivery.

Pricing and price erosion

In 2016, we did not witness a dramatic change in the overall pricing environment. The environment remained similar to what we witnessed in the prior year, when competition intensified in the first quarter of 2015 and impacted the net sales and profitability of our Networks business.

Product mix

The profitability of our Networks business is also affected by our product mix, including the share of software in the sales mix. Products and services have varying profitability profiles. For instance, our Ultra Broadband Networks reportable segment offers a combination of hardware, software and services. Hardware, and especially software products, generally have higher gross margins, but also require significant R&D investment, whereas the service offerings are typically labor-intensive, while carrying low R&D investment, and have relatively low gross margins compared to the hardware and software products.

Seasonality and cyclical nature of projects

Our Networks business' sales are affected by seasonality in the network operators' spending cycles, with generally higher sales in the fourth quarter, as compared to the first quarter of the following year. In addition to normal industry seasonality, there are normal peaks and troughs in the deployment of large infrastructure projects. The timing of these projects depends on new radio spectrum allocation, network upgrade cycles and the availability of new consumer devices and services, which in turn affects our Networks' business sales. As an example, during the last couple of years some of the major LTE roll-outs have been largely completed. The next major technology cycle is expected to begin in 2017 when early use-case trials of 5G technology are expected to start, with the initial commercial deployments currently expected to start in 2018. Another example of cyclical nature is the IP/Optical Networks market, where network operators often first deploy optical capacity into their networks, which is then followed by investments in routing equipment.

Continued operational efficiency improvements

In 2016, our Networks business continued to focus on operational improvement across its business groups. In order to continue to make our Networks business more efficient, higher-performing and positioned for long-term success, we aim to further strengthen our productivity, efficiency and competitive cost structure. To help us achieve this, we continue to bring performance excellence methodologies such as Kaizen, Lean and Six Sigma to all areas of the business. Our Networks business will also pursue further efficiency gains from increased automation in delivery of Global Services and in other areas, as well as continued improvements in R&D efficiency and agility.

Cost of components and raw materials

There are several important factors driving the profitability and competitiveness of our Networks business: scale, operational efficiency and pricing, and cost discipline. The costs of our networks products comprise, among others, components, manufacturing, labor and overheads, royalties and licensing fees, depreciation of product machinery, logistics and warranty and other quality costs.



Principal industry trends affecting operations continued

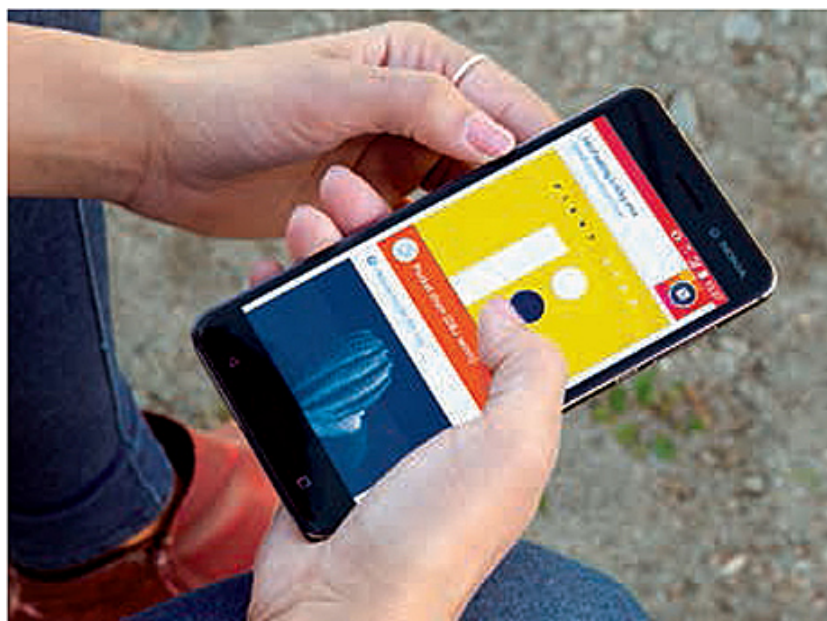
Nokia Technologies

Nokia Technologies pursues new business opportunities building on our innovations and the Nokia brand. Nokia Technologies develops and licenses cutting-edge innovations that are powering the next revolution in computing and mobility. The Nokia Technologies strategy consists of: 1) patent licensing, focused on licensing standard-essential and other patents in the Nokia portfolio to companies in the mobile devices market and beyond; 2) technology licensing, focused on licensing proprietary technologies to enable our customers to build better products; 3) brand partnerships, to help our customers leverage the value of the Nokia brand in consumer devices; and 4) incubation, focused on developing new products and solutions in the areas of digital media and digital health. All of these activities are supported by Nokia Bell Labs, our world-class R&D team. For more information on the Nokia Technologies business, refer to “Business overview—Nokia Technologies”.

Monetization strategies of IPR

Success in the technology industry requires significant R&D investment, with the resulting patents and other IPR utilized to protect and generate a return on those investments and related inventions. In recent years, we have seen new entrants in the mobile device industry, many of which do not have licenses to our patents. Our aim is to approach these companies by potentially using one or more means of monetization. We believe we are well-positioned to protect, and build on, our existing industry-leading patent portfolio, and consequently to increase our shareholders' value.

We see a number of means of monetizing our innovations: on the one hand, we seek to license our patent portfolio, the Nokia brand and new technological innovations to be integrated into other companies' products and services. On the other hand, our incubation activities may also, from time to time, lead to concepts that we bring to the market ourselves as products or services like OZO, the extraordinary VR camera designed and built specifically for professional content



creators. We also accelerated our expansion into digital health in 2016 with the acquisition of Withings SA, a leading innovator in health and lifestyle product technology with a family of award-winning digital health products and services. Overall, we have sharpened our focus on research and product development in alignment with the strategic growth opportunities we see emerging in the areas of digital health and digital media, including preventive health care and immersive VR.

In patent licensing, the main opportunities we are pursuing are: 1) renewing existing license agreements, and negotiating new license agreements with mobile device manufacturers; and 2) expanding the scope of licensing activities to other industries, in particular those that implement mobile communication technologies. We no longer need patent licenses for our own mobile phone business, enabling the possibility of improving the balance of inbound and outbound patent licensing.

In brand licensing, we will continue to seek further opportunities to bring the Nokia brand into consumer devices, by licensing our brand and other intellectual property, as well as, for example, industrial design. For example, under a strategic agreement covering branding rights and intellectual property licensing, Nokia Technologies granted HMD Global, a newly founded company based in Finland, an exclusive global license to create Nokia-branded mobile phones and tablets for the next ten years.

In technology licensing, the opportunities are more long-term in our view, but we will look at opportunities to license technologies developed by Nokia Technologies and delivered to partners in consumer electronics as solutions or technology packages that can be integrated into their products and services to help enable the Programmable World.

To grow each of the aforementioned business programs, it is necessary to invest in commercial capabilities to support them.

General trends in IPR licensing

In general, there has been increased focus on IPR protection and licensing, and this trend is expected to continue. As such, new agreements are generally a product of lengthy negotiations and potential litigation or arbitration, and therefore the timing and outcome may be difficult to forecast. Due to the structure of patent license agreements, the payments may be very infrequent, at times may be partly retrospective, and the lengths of license agreements can vary.

Additionally, there are clear regional differences in the ease of protecting and licensing patented innovations. We have seen some licensees actively avoiding making license payments, and some licensors using aggressive methods to collect them; both behaviors have attracted regulatory attention. We expect discussion of the regulation of licensing to continue at both a global and a regional level. Some of those regulatory developments may be adverse to the interests of technology developers and patent owners, including us.

Research, development and patent portfolio development

As the creation of new technology assets and patented innovations is heavily focused on R&D activities with long lead-times to incremental revenues, we may from time to time see investment opportunities that have strategic importance. This generally affects the operating expenses before sales reflect a return on those investments.

Trends affecting our businesses

Exchange rates

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 U.S. dollar and the Chinese yuan. 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. Refer also to “General facts on Nokia—Selected financial data—Exchange rate data” below.

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 up to a 12-month hedging horizon. For the majority of these hedges, hedge accounting is applied to reduce income statement volatility.

In 2016, approximately 25% of Continuing operations net sales and approximately 25% of Continuing operations costs were denominated in euro. In 2016, approximately 50% of Continuing operations net sales were denominated in U.S. dollar and approximately 10% in Chinese yuan.

During 2016, the U.S. dollar appreciated against the euro and this had a positive impact on our net sales expressed in euros. However, the stronger U.S. dollar also contributed to higher cost of sales and operating expenses, as approximately 45% of our total cost base was in U.S. dollars. In total, before hedging, the appreciation of the U.S. dollar had a slightly positive effect on our operating profit in 2016.

During 2016, the Chinese yuan depreciated against the euro and this had a negative impact on our net sales expressed in euros. However, the weaker Chinese yuan also contributed to lower cost of sales and operating expenses, as approximately 10% of Continuing operations total costs were denominated in Chinese yuan. In total, before hedging, the depreciation of the Chinese yuan had a slightly negative effect on our operating profit in 2016.

Significant changes in exchange rates may also impact our competitive position and related price pressures through their impact on our competitors.

For a discussion of the instruments used by us in connection with our hedging activities, refer to Note 36, Risk management of our consolidated financial statements included in this annual report on Form 20-F. Refer also to “Operating and financial review and prospects—Risk factors”.

The average currency mix for net sales and total costs:

Currency	2016		2015	
	Net sales	Total costs	Net sales	Total costs
EUR	~25%	~25%	~30%	~30%
USD	~50%	~45%	~35%	~30%
CNY	~10%	~10%	~10%	~10%
Other	~15%	~20%	~25%	~30%
Total	100%	100%	100%	100%

Results of operations

The financial information included in this "Operating and financial review and prospects" section as of December 31, 2016 and 2015 and for each of the three years ended December 31, 2016, 2015 and 2014 has been derived from our audited consolidated financial statements included in this annual report on Form 20-F. The financial information as of December 31, 2016 and 2015 and for each of the three years ended December 31, 2016, 2015 and 2014 should be read in conjunction with, and is qualified in its entirety by reference to, our audited consolidated financial statements.

In 2016, following the Acquisition of Alcatel Lucent on January 4, 2016 (refer to Note 5, Acquisitions, of our consolidated financial statements included in this annual report on Form 20-F), we revised our financial reporting structure. We have two businesses: Nokia's Networks business and Nokia Technologies, and three reportable segments for financial reporting purposes: Ultra Broadband Networks and IP Networks and Applications (within Nokia's Networks business) and Nokia Technologies. We also present certain segment data for Group Common and Other as well as for Discontinued operations. The comparative financial information presented below has been prepared to reflect the financial results of our Continuing operations as if the new financial reporting structure had been in operation for the full years 2015 and 2014. Certain accounting policy alignments, adjustments and reclassifications have been necessary. Refer to Note 4, Segment information, of our consolidated financial statements included in this annual report on Form 20-F.

Continuing operations

For the year ended December 31, 2016 compared to the year ended December 31, 2015

The following table sets forth selective line items and the percentage of net sales for the years indicated.

For the year ended December 31	2016 EURm	% of net sales	2015 EURm	% of net sales	Year-on-year change %
Net sales	23 614	100.0	12 499	100.0	89
Cost of sales	(15 158)	(64.2)	(6 963)	(55.7)	118
Gross profit	8 456	35.8	5 536	44.3	53
Research and development expenses	(4 904)	(20.8)	(2 080)	(16.6)	136
Selling, general and administrative expenses	(3 819)	(16.2)	(1 772)	(14.2)	116
Other income and expenses	(833)	(3.5)	13	0.1	–
Operating (loss)/profit	(1 100)	(4.7)	1 697	13.6	–
Share of results of associated companies and joint ventures	18	0.1	29	0.2	(38)
Financial income and expenses	(287)	(1.2)	(186)	(1.5)	(54)
(Loss)/profit before tax	(1 369)	(5.8)	1 540	12.3	–
Income tax benefit/(expense)	457	1.9	(346)	(2.8)	–
(Loss)/profit for the year	(912)	(3.9)	1 194	9.6	–

Net sales

Continuing operations net sales in 2016 were EUR 23 614 million, an increase of EUR 11 115 million, or 89%, compared to EUR 12 499 million in 2015. The increase in Continuing operations net sales was primarily attributable to growth in Nokia's Networks business and Group Common and Other, primarily related to the Acquisition of Alcatel Lucent and, to a lesser extent, growth in Nokia Technologies.

Nokia's Networks business net sales in 2016 were EUR 21 800 million, an increase of EUR 10 313 million, or 90%, compared to EUR 11 487 million in 2015. Ultra Broadband Networks net sales were EUR 15 771 million in 2016, an increase of EUR 5 612 million, or 55%, compared to EUR 10 159 million in 2015. IP Networks and Applications net sales were EUR 6 029 million in 2016, an increase of EUR 4 701 million compared to EUR 1 328 million in 2015. The increase in Ultra Broadband Networks net sales is comprised of an increase in Mobile Networks net sales of EUR 3 383 million and an increase in Fixed Networks net sales of EUR 2 229 million. The increase in Mobile Networks net sales was primarily attributable to the Acquisition of Alcatel Lucent, which drove higher net sales in both Radio Networks and Services. This was partially offset by revenue declines from several key customers in Asia-Pacific and North America due to previous build-outs and investments, as well as adverse market conditions in Latin America. The increase in Fixed Networks net sales was primarily attributable to the Acquisition of Alcatel Lucent, and increases in Broadband Access, supported by the completion of a large project in Asia-Pacific.

The increase in IP Networks and Applications net sales is comprised of an increase in IP/Optical Networks net sales of EUR 3 987 million and an increase in Applications & Analytics net sales of EUR 714 million, primarily attributable to the Acquisition of Alcatel Lucent. The increase in IP/Optical Networks net sales was attributable to an increase in IP Routing net sales of EUR 2 425 million and an increase in Optical Networks net sales of EUR 1 562 million. The increase in Applications & Analytics net sales was primarily attributable to the Acquisition of Alcatel Lucent, and increases in Services.

Group Common and Other net sales in 2016 were EUR 1 145 million, an increase of EUR 1 145 million, compared to approximately zero in 2015. The increase in Group Common and Other net sales was primarily due to ASN and RFS net sales.

Nokia Technologies net sales in 2016 were EUR 1 053 million, an increase of EUR 26 million, or 3%, compared to EUR 1 027 million in 2015. The increase in Nokia Technologies net sales was primarily attributable to higher IPR licensing income and the inclusion of Withings' net sales from June 2016 onwards resulting from the acquisition of Withings, partially offset by the absence of non-recurring adjustments to accrued net sales from existing and new agreements, and lower licensing income from certain existing licensees.

The following table sets forth distribution of net sales by geographical area for the years indicated.

For the year ended December 31	2016 EURm	2015 EURm	Year-on-year change %
Asia-Pacific	4 206	3 230	30
Europe(1)	6 393	3 813	68
Greater China	2 656	1 712	55
Latin America	1 457	973	50
Middle East & Africa	1 871	1 177	59
North America	7 031	1 594	341
Total	23 614	12 499	89

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

Refer to “—Results of segments—Nokia’s Networks business” for the main changes in regional net sales.

Gross margin

Gross margin for Continuing operations in 2016 was 35.8% compared to 44.3% in 2015. The decrease in gross margin was primarily due to Nokia’s Networks business and, to a lesser extent, Nokia Technologies and Group Common and Other.

Nokia’s Networks business gross margin in 2016 was 38.5%, compared to 39.0% in 2015. The slight decrease in Nokia’s Networks business gross margin was due to decreases in both Ultra Broadband Networks gross margin and IP Networks and Applications gross margin. Ultra Broadband Networks gross margin in 2016 was 36.3%, compared to 37.5% in 2015. The decrease in Ultra Broadband Networks gross margin was primarily attributable to higher central cost of sales in Mobile Networks, partially offset by favorable region and product mix, and the completion of a large Fixed Networks project in the Asia-Pacific region. IP Networks and Applications gross margin in 2016 was 44.1%, compared to 50.9% in 2015. The decrease in IP Networks and Applications gross margin was primarily attributable to changes in the business volume and mix, primarily attributable to the Acquisition of Alcatel Lucent.

Nokia Technologies gross margin in 2016 was 96.0%, compared to 99.3% in 2015. The decrease in Nokia Technologies gross margin in 2016 was primarily attributable to new, lower gross margin business in digital health from Withings, and to a lesser extent, digital media.

Group Common and Other gross margin in 2016 was 16.8%. The Group Common and Other gross margin was attributable to gross margin in ASN and RFS.

In 2016, cost of sales included working capital-related purchase price allocation adjustments of EUR 509 million, which resulted in higher cost of sales and lower gross profit when the inventory was sold; and product portfolio integration-related costs of EUR 274 million.

Operating expenses

Our R&D expenses for Continuing operations in 2016 were EUR 4 904 million, an increase of EUR 2 824 million, or 136%, compared to EUR 2 080 million in 2015. R&D expenses represented 20.8% of our net sales in 2016 compared to 16.6% in 2015. The increase in R&D expenses was primarily attributable to Nokia’s Networks business, amortization of acquired intangible assets and depreciation of acquired property, plant and equipment; and, to a lesser extent, product portfolio integration costs, as well as Group Common and Other, all of which primarily related to the Acquisition of Alcatel Lucent, in addition to Nokia Technologies.

Nokia’s Networks business R&D expenses were EUR 3 691 million in 2016, an increase of EUR 1 953 million, or 112%, compared to EUR 1 738 million in 2015. The increase in Nokia’s Networks business R&D expenses was primarily attributable to an increase in headcount, partially offset by operational and synergy savings. Group Common and Other R&D expenses in 2016 were EUR 282 million, an increase of EUR 198 million, compared to EUR 84 million in 2015. Group Common and Other R&D expenses increased, primarily attributable to Nokia Bell Labs. Nokia Technologies R&D expenses in 2016 were EUR 250 million, an increase of EUR 30 million, or 14%, compared to EUR 220 million in 2015. The increase in R&D expenses in Nokia Technologies was primarily attributable to the inclusion of Bell Labs’ patent portfolio costs, resulting from the Acquisition of Alcatel Lucent, and higher investments in the areas of digital media and digital health. R&D expenses included amortization and depreciation of acquired intangible assets, and property, plant and equipment of EUR 619 million in 2016 compared to EUR 35 million in 2015, as well as product portfolio integration-related costs of EUR 61 million in 2016.

Our selling, general and administrative expenses for Continuing operations in 2016 were EUR 3 819 million, an increase of EUR 2 047 million, or 116%, compared to EUR 1 772 million in 2015. Selling, general and administrative expenses represented 16.2% of our net sales in 2016 compared to 14.2% in 2015. The increase in selling, general and administrative expenses was primarily attributable to Nokia’s Networks business, amortization of acquired intangible assets and depreciation of acquired property, plant and equipment, and transaction and integration-related costs and Group Common and Other, all of which primarily related to the Acquisition of Alcatel Lucent, as well as Nokia Technologies.

Nokia’s Networks business selling, general and administrative expenses were EUR 2 720 million in 2016, an increase of EUR 1 300 million, or 92%, compared to EUR 1 420 million in 2015. The increase in Nokia’s Networks business selling, general and administrative expenses was primarily attributable to an increase in headcount, partially offset by operational and synergy savings. Group Common and Other selling, general and administrative expenses in 2016 were EUR 231 million, an increase of EUR 134 million compared to EUR 97 million in 2015. Nokia Technologies selling, general and administrative expenses in 2016 were EUR 183 million, an increase of EUR 74 million, or 68%, compared to EUR 109 million in 2015. The increase in Nokia Technologies selling, general and administrative expenses was primarily attributable to the ramp-up of Digital Health and Digital Media, higher business support costs and increased licensing. Selling, general and administrative expenses included amortization and depreciation of acquired intangible assets, and property, plant and equipment of EUR 385 million in 2016 compared to EUR 44 million in 2015, as well as transaction and integration-related costs of EUR 294 million in 2016.

Other income and expenses for Continuing operations in 2016 was a net expense of EUR 833 million, a change of EUR 846 million, compared to a net income of EUR 13 million in 2015. The change was primarily attributable to higher restructuring and associated charges and, to a lesser extent, the absence of realized gains related to certain investments made through venture funds. Other income and expenses included restructuring and associated charges of EUR 759 million in 2016 compared to EUR 121 million in 2015.

Results of operations continued

Operating loss/profit

Our operating loss for Continuing operations in 2016 was EUR 1 100 million, a change of EUR 2 797 million, compared to an operating profit of EUR 1 697 million in 2015. The change in operating result was primarily attributable to higher R&D expenses and selling, general and administrative expenses, and a net negative fluctuation in other income and expenses, partially offset by higher gross profit. Our operating margin in 2016 was negative 4.7% compared to positive 13.6% in 2015.

The following table sets forth the impact of unallocated items on operating loss/profit:

EURm	2016	2015
Total segment operating profit(1)	2 172	1 958
Amortization and depreciation of acquired intangible assets and property, plant and equipment	(1 026)	(79)
Release of acquisition-related fair value adjustments to deferred revenue and inventory	(840)	—
Restructuring and associated charges	(774)	(123)
Product portfolio strategy costs	(348)	—
Transaction and related costs, including integration costs relating to the Acquisition of Alcatel Lucent	(295)	(99)
Other	11	40
Total operating loss/profit	(1 100)	1 697

(1) Excludes costs related to the Acquisition of Alcatel Lucent and related integration, goodwill impairment charges, intangible asset amortization and other purchase price fair value adjustments, restructuring and associated charges and certain other items.

Financial income and expenses

Financial income and expenses for Continuing operations was a net expense of EUR 287 million in 2016 compared to a net expense of EUR 186 million in 2015, an increase of EUR 101 million, or 54%. The change in financial income and expenses was primarily attributable to higher interest expenses, including charges of EUR 41 million related to the redemption of Alcatel Lucent bonds, net interest expenses of EUR 65 million for defined benefit pensions, and impairments of EUR 108 million for certain investments in private funds; partially offset by higher interest income, significantly lower foreign exchange losses and realized gains from venture fund distributions.

Refer to "—Liquidity and capital resources" below.

Loss/profit before tax

Our loss before tax for Continuing operations in 2016 was EUR 1 369 million, a change of EUR 2 909 million compared to a profit of EUR 1 540 million in 2015.

Income tax

Income taxes for Continuing operations was a net benefit of EUR 457 million in 2016, a change of EUR 803 million compared to a net expense of EUR 346 million in 2015. In 2016, net income tax benefit was primarily related to two factors. Firstly, we recorded a loss before tax compared to profit before tax in 2015. Secondly, following the completion of the squeeze-out of the remaining Alcatel Lucent securities, we launched actions to integrate the former Alcatel Lucent and Nokia operating models. In 2016, in connection with these integration activities, we transferred certain intellectual property to our operations in the United States, recording a tax benefit and additional deferred tax assets of EUR 348 million. In addition, we elected to treat the Acquisition of Alcatel Lucent's operations in the United States as an asset purchase for United States tax purposes. The impact of this election was to utilize or forfeit existing deferred tax assets and record new deferred tax assets with a longer amortization period than the life of those forfeited assets. As a result of this we recorded EUR 91 million additional deferred tax assets in 2016.

Following the acquisition of Alcatel Lucent, we now have a strong presence in three jurisdictions: Finland, France and the United States, which had an impact on our effective tax rate in 2016. The local corporate tax rate in the United States and France is significantly higher compared to Finland. In addition, we do not recognize deferred tax assets for tax losses and temporary differences in France as our ability to utilize unrecognized deferred tax assets is currently uncertain. As of December 31, 2016 we have unrecognized deferred tax assets in France of EUR 4.8 billion.

We will continue to make changes in our operating model in 2017 and expect this to have an impact on our effective tax rate in 2017 and going forward (refer to Note 37, Subsequent events, of our consolidated financial statements included in this annual report on Form 20-F).

Loss/profit attributable to equity holders of the parent and earnings per share

The loss attributable to equity holders of the parent in 2016 was EUR 766 million, a change of EUR 3 232 million, compared to a profit of EUR 2 466 million in 2015. Continuing operations generated a loss attributable to equity holders of the parent in 2016 of EUR 751 million compared to a profit of EUR 1 192 million in 2015. The change in profit attributable to equity holders of the parent was primarily attributable to the operating loss in 2016, compared to an operating profit in 2015 and, to a lesser extent, a net negative fluctuation in financial income and expenses, both of which primarily related to the Acquisition of Alcatel Lucent. This was partially offset by an income tax benefit, resulting from the Acquisition of Alcatel Lucent, compared to an income tax expense in 2015. In addition, the loss attributable to the non-controlling interests was higher, as a result of the Acquisition of Alcatel Lucent. Our total basic EPS in 2016 decreased to negative EUR 0.13 (basic) and negative EUR 0.13 (diluted) compared to EUR 0.67 (basic) and EUR 0.63 (diluted) in 2015. In 2015, profit for the year included EUR 1 178 million gain on the Sale of the HERE Business recorded in Discontinued operations. From Continuing operations, EPS in 2016 decreased to negative EUR 0.13 (basic) and negative EUR 0.13 (diluted) compared to EUR 0.32 (basic) and EUR 0.31 (diluted) in 2015.

Cost savings program

On April 6, 2016, we launched a new cost savings program, targeting approximately EUR 1 200 million of total annual cost savings to be achieved in full year 2018. In 2016, we recognized restructuring and associated charges of EUR 750 million related to the cost savings program. Total expected restructuring and associated charges are EUR 1 700 million. In 2016, we had cumulative restructuring and associated cash outflows of EUR 590 million relating to this cost savings program. We expect the remaining restructuring and associated cash outflows relating to this cost savings program to be approximately EUR 2 150 million, including EUR 450 million related to previous Nokia and Alcatel Lucent restructuring and cost savings programs.

Carrying value of cash-generating units

The recoverable amounts of our cash-generating units ("CGUs") were based on fair value less costs of disposal that was determined using market participant assumptions based on 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 five years. Five additional years of cash flow projections subsequent to the explicit forecast period reflect a gradual progression towards the steady state cash flow projections modeled in the terminal year.

Estimation and judgment are required in determining the components of the recoverable amount calculation, including the discount rate, the terminal growth rate, estimated revenue growth rates, gross margin and operating margin. The discount rates reflect current

assessments of the time value of money and relevant market risk premiums reflecting risks and uncertainties for which the future cash flow estimates have not been adjusted. The terminal growth rate assumptions reflect long-term average growth rates for the industry and economies in which our CGUs operate.

We allocated a significant proportion of the goodwill arising from the Acquisition of Alcatel Lucent to the IP/Optical Networks group of CGUs, which is comprised mainly of businesses acquired in the acquisition. As a result, the fair value of the IP/Optical Networks group of CGU's corresponds closely to its respective carrying amount.

The results of our impairment testing indicate significant headroom for each CGU, except for the IP/Optical Networks group of CGUs, where the recoverable amount exceeds its carrying amount by approximately EUR 1 200 million. Taken in isolation, the following changes would cause the recoverable amount of IP/Optical Networks group of CGUs to equal its carrying amount:

- Increase in discount rate from 8.9% to 10.7%.
- Reduction in operational profitability in the terminal year by 40%, which is equal to the decrease in the operating profit of EUR 331 million.

Goodwill amounts to EUR 5 724 million as of December 31, 2016 (EUR 237 million in 2015).

Refer to Note 16, Impairment, of our consolidated financial statements included in this annual report on Form 20-F.

For the year ended December 31, 2015 compared to the year ended December 31, 2014

The following table sets forth selective line items and the percentage of net sales that they represent for the years indicated.

	2015		2014		Year-on-year change %
	EURm	% of net sales	EURm	% of net sales	
For the year ended December 31					
Net sales	12 499	100.0	11 762	100.0	6
Cost of sales	(6 963)	(55.7)	(6 774)	(57.6)	3
Gross profit	5 536	44.3	4 988	42.4	11
Research and development expenses	(2 080)	(16.6)	(1 904)	(16.2)	9
Selling, general and administrative expenses	(1 772)	(14.2)	(1 559)	(13.3)	14
Other income and expenses	13	0.1	(111)	(0.9)	–
Operating profit	1 697	13.6	1 414	12.0	20
Share of results of associated companies and joint ventures	29	0.2	(12)	(0.1)	–
Financial income and expenses	(186)	(1.5)	(403)	(3.4)	(54)
Profit before tax	1 540	12.3	999	8.5	54
Income tax (expense)/benefit	(346)	(2.8)	1 719	14.6	–
Profit for the year	1 194	9.6	2 718	23.1	(56)

Net sales

Continuing operations net sales in 2015 were EUR 12 499 million, an increase of EUR 737 million, or 6%, compared to EUR 11 762 million in 2014. The increase in Continuing operations net sales was attributable to higher net sales in both Nokia's Networks business and Nokia Technologies. The increase in Nokia's Networks business net sales was primarily attributable to an increase in net sales in Ultra Broadband Networks, partially offset by the absence of non-recurring IPR net sales which benefited full year 2014. The increase in Nokia Technologies net

sales was primarily attributable to non-recurring net sales from existing and new agreements and revenue share related to previously divested IPR, and IPR divestments; higher IPR licensing income from existing and new licensees related to settled and ongoing arbitrations; as well as Microsoft becoming a more significant intellectual property licensee following the Sale of the D&S Business. The increase in net sales was partially offset by lower licensing income from certain existing licensees that experienced decreases in handset sales.

Results of operations continued

The following table sets forth distribution of net sales by geographical area for the years indicated.

For the year ended December 31	2015 EURm	2014 EURm	Year-on-year change %
Asia-Pacific	3 230	3 289	(2)
Europe(1)	3 813	3 493	9
Greater China	1 712	1 380	24
Latin America	973	1 009	(4)
Middle East & Africa	1 177	1 053	12
North America	1 594	1 538	4
Total	12 499	11 762	6

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

Refer to "Results of segments—Nokia's Networks business" for the main changes in regional net sales.

Gross margin

Gross margin for Continuing operations in 2015 was 44.3% compared to 42.4% in 2014. The increase in Continuing operations gross margin was primarily attributable to an increase in Nokia Technologies and Nokia's Networks business gross margins, and to a lesser extent to Group Common and Other gross margin. The increase in Nokia Technologies gross margin in 2015 was primarily attributable to higher net sales. The increase in Nokia's Networks business gross margin in 2015 was attributable to a higher gross margin in Ultra Broadband Networks, partially offset by lower gross margin in IP Networks and Applications and the absence of non-recurring IPR net sales which benefited full year 2014. The increase in Group Common and Other gross margin in 2015 was primarily attributable to lower cost of sales.

Operating expenses

Our R&D expenses for Continuing operations in 2015 were EUR 2 080 million, an increase of EUR 176 million, or 9%, compared to EUR 1 904 million in 2014. R&D expenses represented 16.6% of our net sales in 2015 compared to 16.2% in 2014. The increase in R&D expenses was primarily attributable to higher R&D expenses in Nokia's Networks business and to a lesser extent in Nokia Technologies. The increase in Nokia's Networks business R&D expenses in 2015 was primarily attributable to higher personnel expenses and increased investments in LTE, 5G, small cells and Cloud core, partially offset by continued operational improvements. The increase in Nokia Technologies R&D expenses was primarily attributable to higher investments in Digital Media and technology incubation, higher patent portfolio costs and higher investments in Digital Health. R&D expenses included amortization of acquired intangible assets of EUR 35 million and transaction-related costs of EUR 1 million in 2015 compared to EUR 32 million and EUR 13 million in 2014 respectively.

Our selling, general and administrative expenses for Continuing operations in 2015 were EUR 1 772 million, an increase of EUR 213 million, or 14%, compared to EUR 1 559 million in 2014. Selling, general and administrative expenses represented 14.2% of our net sales in 2015 compared to 13.3% in 2014. The increase in selling, general and administrative expenses was primarily attributable to higher selling, general and administrative expenses in Nokia's Networks business, and to a lesser extent in Nokia Technologies, partially offset by lower selling, general and administrative expenses in Group Common and Other. The increase in Nokia's Networks business selling, general and administrative expenses was primarily attributable to higher personnel expenses, partially offset by a continued focus on cost efficiency. The increase in Nokia Technologies selling, general and administrative expenses was primarily attributable to the ramp-up of new businesses, increased licensing activities, and higher business support costs. Selling, general and administrative expenses included transaction-related costs of EUR 99 million and amortization of acquired intangible assets of EUR 44 million in 2015 compared to EUR 29 million and EUR 35 million in 2014 respectively.

Other income and expenses for Continuing operations in 2015 was a net income of EUR 13 million, an increase of EUR 124 million, compared to a net expense of EUR 111 million in 2014. The increase in other income and expenses was primarily attributable to Group Common and Other, and to a lesser extent to Nokia's Networks business and Nokia Technologies. Group Common and Other other income and expenses in 2015 included net income of approximately EUR 100 million related to realized gains on investments made through unlisted venture funds. The change in Nokia's Networks business other income and expenses in 2015 was primarily attributable to lower costs related to the sale of receivables, lower net indirect tax expenses and the release of certain doubtful account allowances. Other income and expenses included restructuring and associated charges of EUR 121 million and contractual remediation costs of EUR 5 million in 2015 compared to EUR 57 million and EUR 31 million in 2014 respectively.

Operating profit

Our operating profit for Continuing operations in 2015 was EUR 1 697 million, an increase of EUR 283 million, or 20%, compared to an operating profit of EUR 1 414 million in 2014. The increase in operating profit was primarily attributable to an increase in operating profit in Nokia Technologies and a lower operating loss from Group Common and Other, partially offset by lower operating profit in Nokia's Networks business. Our operating margin in 2015 was 13.6% compared to 12.0% in 2014.

The following table sets forth the impact of unallocated items on operating profit:

EURm	2015	2014
Total segment operating profit⁽¹⁾	1 958	1 602
Restructuring and associated charges	(123)	(57)
Transaction and related costs, including integration costs relating to the Acquisition of Alcatel Lucent	(99)	(39)
Amortization of acquired intangible assets	(79)	(67)
Other	40	(25)
Total operating profit	1 697	1 414

(1) Excludes costs related to the Acquisition of Alcatel Lucent and related integration, goodwill impairment charges, intangible asset amortization and other purchase price fair value adjustments, restructuring and associated charges and certain other items.

Financial income and expenses

Financial income and expenses for Continuing operations was a net expense of EUR 186 million in 2015 compared to a net expense of EUR 403 million in 2014, a decrease of EUR 217 million, or 54%. The lower net financial expense in 2015 was primarily attributable to the absence of a financial expense of EUR 123 million relating to the redemption of all material Nokia's Networks business' borrowings in 2014, and the absence of a non-cash charge of EUR 57 million relating to the repayment of EUR 1 500 million convertible bonds issued to Microsoft.

Refer to "—Liquidity and capital resources" below.

Profit before tax

Our profit before tax for Continuing operations in 2015 was EUR 1 540 million, an increase of EUR 541 million compared to EUR 999 million in 2014.

Income tax

Income taxes for Continuing operations were a net expense of EUR 346 million in 2015, a change of EUR 2 065 million compared to a net benefit of EUR 1 719 million in 2014. In 2014, the net income tax benefit was primarily attributable to the recognition of EUR 2 126 million deferred tax assets following the reassessment of recoverability of tax assets in Finland and Germany.

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

Profit attributable to equity holders of the parent in 2015 was EUR 2 466 million, a decrease of EUR 996 million, compared to a profit of EUR 3 462 million in 2014. Continuing operations generated profit attributable to equity holders of the parent in 2015 of EUR 1 192 million compared to a profit of EUR 2 710 million in 2014. Profit attributable to equity holders of the parent in 2014 was favorably impacted by the recognition of EUR 2 126 million deferred tax assets. Nokia Group's total basic EPS in 2015 decreased to EUR 0.67 (basic) and EUR 0.63 (diluted) compared to EUR 0.94 (basic) and EUR 0.85 (diluted) in 2014. Profit for the year included EUR 1 178 million gain on the Sale of the HERE Business (EUR 2 803 million gain on the Sale of the D&S Business in 2014) recorded in Discontinued operations. From Continuing operations, EPS in 2015 decreased to EUR 0.32 (basic) and EUR 0.31 (diluted) compared to EUR 0.73 (basic) and EUR 0.67 (diluted) in 2014.

Results of operations continued

Discontinued operations

Background

The two businesses below are presented as Discontinued operations in this annual report on Form 20-F.

HERE business

We sold our HERE digital mapping and location services business to a German automotive industry consortium comprised of AUDI AG, BMW Group and Daimler AG, that was completed on December 4, 2015 ("the Sale of HERE Business").

The transaction, originally announced on August 3, 2015, valued HERE at an enterprise value of EUR 2.8 billion, subject to certain purchase price adjustments. We received net proceeds from the transaction of approximately EUR 2.55 billion at the closing of the transaction. We recorded a gain on the Sale of the HERE Business, including a related release of cumulative foreign exchange translation differences of approximately EUR 1.2 billion, in the year ended December 31, 2015.

Devices & Services business

We sold substantially all of our Devices & Services business to Microsoft in a transaction that was completed on April 25, 2014 (the "Sale of the D&S Business"). We granted Microsoft a ten-year non-exclusive license to our patents and patent applications. The announced purchase price of the transaction was EUR 5.44 billion, of which EUR 3.79 billion related to the purchase of substantially all of the Devices & Services business, and EUR 1.65 billion to the ten-year mutual patent license agreement and the option to extend this agreement into perpetuity. Of the Devices & Services-related assets, our former CTO organization and our patent portfolio remained within the Nokia Group, and are now part of the Nokia Technologies business group.

For the year ended December 31, 2016 compared to the year ended December 31, 2015

As the Sale of the HERE Business closed on December 4, 2015, the financial results of Discontinued operations in 2016 are not comparable to the financial results of Discontinued operations in 2015.

The following table sets forth selective line items for the years indicated.

	2016	2015
	EURm	EURm
For the year ended December 31		
Net sales	–	1 075
Cost of sales	–	(244)
Gross profit	–	831
Research and development expenses	–	(498)
Selling, general and administrative expenses	(11)	(213)
Other income and expenses	(4)	(23)
Operating (loss)/profit	(15)	97
Financial income and expenses	14	(9)
(Loss)/profit before tax	(1)	88
Income tax (expense)/benefit	(28)	8
(Loss)/profit for the year, ordinary activities	(29)	96
Gain on the Sale of the HERE and D&S Businesses, net of tax ⁽¹⁾	14	1 178
(Loss)/profit for the year	(15)	1 274

(1) In 2016, an additional gain of EUR 7 million was recognized on the Sale of the HERE Business following the final purchase price settlement, and EUR 7 million on the Sale of the D&S Business due to a tax indemnification.

Net sales

Discontinued operations did not generate net sales in 2016. In 2015, Discontinued operations net sales were EUR 1 075 million. The decrease was attributable to the absence of net sales from HERE.

Gross margin

Discontinued operations did not generate gross margin in 2016. In 2015, Discontinued operations gross margin was 77.3% in 2015. The decrease in gross margin was attributable to the absence of net sales and cost of sales from HERE.

Operating expenses

Discontinued operations operating expenses in 2016 were EUR 15 million, a decrease of EUR 719 million, compared to EUR 734 million in 2015. The decrease was attributable to the absence of operating expenses from HERE.

Operating loss/profit

Discontinued operations operating loss in 2016 was EUR 15 million, a change of EUR 112 million, compared to an operating profit of EUR 97 million in 2015. The change in Discontinued operations operating result was attributable to the absence of net sales and operating expenses from HERE.

Loss/profit for the year

Discontinued operations loss in 2016 was EUR 15 million, a change of EUR 1 289 million compared to a profit of EUR 1 274 million in 2015. The gain on the Sale of the HERE Business recorded in 2015 was EUR 1 178 million, which included a reclassification of EUR 1 174 million of foreign exchange differences from other comprehensive income.

For the year ended December 31, 2015 compared to the year ended December 31, 2014

As the Sale of the HERE Business closed on December 4, 2015 and the Sale of the D&S Business closed on April 25, 2014, the financial results of Discontinued operations in 2015 are not comparable to the financial results of Discontinued operations in 2014.

The following table sets forth selective line items for the years indicated.

	2015	2014
	EURm	EURm
For the year ended December 31		
Net sales	1 075	3 428
Cost of sales	(244)	(2 325)
Gross profit	831	1 103
Research and development expenses	(498)	(899)
Selling, general and administrative expenses	(213)	(628)
Other income and expenses(1)	(23)	(1 354)
Operating profit/(loss)	97	(1 778)
Financial income and expenses	(9)	10
Profit/(loss) before tax	88	(1 768)
Income tax benefit/(expense)	8	(277)
Profit/(loss) for the year, ordinary activities	96	(2 045)
Gain on the Sale of the HERE and D&S Businesses, net of tax	1 178	2 803
Profit for the year	1 274	758

(1) Includes impairment of goodwill of EUR 1 209 million related to HERE in 2014.

Net sales

Discontinued operations net sales in 2015 were EUR 1 075 million, a decrease of EUR 2 353 million, or 69%, compared to EUR 3 428 million in 2014. The decrease was attributable to the absence of net sales from Devices & Services.

Gross margin

Discontinued operations gross margin in 2015 was 77.3%, compared to a gross margin of 32.2% in 2014. The increase in gross margin was attributable to the absence of cost of sales from Devices & Services.

Operating expenses

Discontinued operations operating expenses in 2015 were EUR 734 million, a decrease of EUR 2 147 million, or 74.5%, compared to EUR 2 881 million in 2014. The decrease was primarily attributable to the absence of a EUR 1 209 million impairment charge related to HERE which negatively affected 2014, and lower operating expenses attributable to Devices & Services.

Operating profit/loss

Discontinued operations operating profit in 2015 was EUR 97 million, an increase of EUR 1 875 million, compared to an operating loss of EUR 1 778 million in 2014. The change in Discontinued operations operating result was primarily attributable to the absence of a EUR 1 209 million impairment charge related to HERE which negatively affected 2014, and lower operating expenses attributable to Devices & Services, partially offset by lower gross profit.

Profit for the year

Discontinued operations profit in 2015 was EUR 1 274 million, an increase of EUR 516 million compared to a profit of EUR 758 million in 2014. The gain on the Sale of the HERE Business recorded in 2015 was EUR 1 178 million, which included a reclassification of EUR 1 174 million of foreign exchange differences from other comprehensive income. The gain on the Sale of the D&S Business recorded in 2014 was EUR 2 803 million.

Results of segments

Networks business

For the year ended December 31, 2016 compared to the year ended December 31, 2015

The following table sets forth selective line items and the percentage of net sales for the years indicated.

	2016		2015		
For the year ended December 31	EURm	% of net sales	EURm	% of net sales	Year-on-year change %
Net sales	21 800	100.0	11 487	100.0	90
Cost of sales	(13 414)	(61.5)	(7 006)	(61.0)	91
Gross profit	8 386	38.5	4 481	39.0	87
Research and development expenses	(3 691)	(16.9)	(1 738)	(15.1)	112
Selling, general and administrative expenses	(2 720)	(12.5)	(1 420)	(12.4)	92
Other income and expenses	(40)	(0.2)	26	0.2	–
Operating profit	1 935	8.9	1 349	11.7	43

Segment information(1)

	Ultra			IP Networks and Applications(3)		
	Broadband Networks(2)	2016	2015	Networks total(4)	2016	2015
For the year ended December 31	EURm	EURm	EURm	EURm	EURm	EURm
Net sales	15 771	6 029	21 800	10 159	1 328	11 487
Cost of sales	(10 044)	(3 370)	(13 414)	(6 354)	(652)	(7 006)
Gross profit	5 727	2 659	8 386	3 805	676	4 481
Research and development expenses	(2 405)	(1 286)	(3 691)	(1 470)	(268)	(1 738)
Selling, general and administrative expenses	(1 936)	(784)	(2 720)	(1 146)	(274)	(1 420)
Other income and expenses	(24)	(16)	(40)	22	4	26
Operating profit	1 362	573	1 935	1 211	138	1 349

(1) Refer to Note 4, Segment information, of our consolidated financial statements included in this annual report.

(2) Net sales include EUR 13 406 million (EUR 10 023 million in 2015) attributable to Mobile Networks and EUR 2 365 million (EUR 136 million in 2015) attributable to Fixed Networks.

(3) Net sales include EUR 2 940 million (EUR 515 million in 2015) attributable to IP Routing; EUR 1 562 million attributable to Optical Networks; and EUR 1 527 million (EUR 813 million in 2015) attributable to Applications & Analytics.

(4) Includes Services net sales of EUR 8 531 million (EUR 5 424 million in 2015).

Net sales

Nokia's Networks business net sales in 2016 were EUR 21 800 million, an increase of EUR 10 313 million, or 90%, compared to EUR 11 487 million in 2015. The increase in Nokia's Networks business net sales was primarily attributable to the Acquisition of Alcatel Lucent. Ultra Broadband Networks net sales were EUR 15 771 million in 2016, an increase of EUR 5 612 million, or 55%, compared to EUR 10 159 million in 2015. IP Networks and Applications net sales were EUR 6 029 million in 2016, an increase of EUR 4 701 million compared to EUR 1 328 million in 2015.

The increase in Ultra Broadband Networks net sales is comprised of an increase in Mobile Networks net sales of EUR 3 383 million and an increase in Fixed Networks net sales of EUR 2 229 million. The increase in Mobile Networks net sales was primarily attributable to the Acquisition of Alcatel Lucent, which drove higher net sales in both Radio Networks and Services. This was partially offset by revenue declines from several key customers in Asia-Pacific and North America due to previous build-outs and investments, as well as adverse market conditions in Latin America. The increase in Fixed Networks net sales was primarily attributable to the Acquisition of Alcatel Lucent, and increases in Broadband Access, supported by the completion of a large project in Asia-Pacific.

The increase in IP Networks and Applications net sales is comprised of an increase in IP/Optical Networks net sales of EUR 3 987 million and an increase in Applications & Analytics net sales of EUR 714 million, primarily attributable to the Acquisition of Alcatel Lucent. The increase in IP/Optical Networks net sales was attributable to an increase in IP Routing net sales of EUR 2 425 million and an increase in Optical Networks net sales of EUR 1 562 million. The increase in Applications & Analytics net sales was primarily attributable to the Acquisition of Alcatel Lucent, and increases in Services.

The following table sets forth distribution of net sales by geographical area for the years indicated.

	2016	2015	Year-on-year change %
For the year ended December 31	EURm	EURm	
Asia-Pacific	4 216	3 231	30
Europe	4 881	2 805	74
Greater China	2 640	1 710	54
Latin America	1 444	970	49
Middle East & Africa	1 889	1 177	60
North America	6 730	1 594	322
Total	21 800	11 487	90

On a regional basis, Nokia's Networks business net sales increased across all regions, with particularly strong growth in North America and Europe, primarily attributable to the Acquisition of Alcatel Lucent.

The increase in Mobile Networks net sales was driven by the Acquisition of Alcatel Lucent, resulting in significant improvements in the North America, Greater China, and the Middle East & Africa regions, partially offset by revenue decreases in Asia-Pacific and Latin America. The increase in Fixed Networks net sales was primarily attributable to the Acquisition of Alcatel Lucent, supported by the completion of a large project in Asia-Pacific, offset by contraction in Europe.

The increases in both IP/Optical Networks net sales and Applications & Analytics net sales were primarily attributable to significant increases in North America following the Acquisition of Alcatel Lucent.

Gross margin

Nokia's Networks business gross margin in 2016 was 38.5%, compared to 39.0% in 2015. The slight decrease in Nokia's Networks business gross margin was due to decreases in both Ultra Broadband Networks gross margin and IP Networks and Applications gross margin. Ultra Broadband Networks gross margin in 2016 was 36.3%, compared to 37.5% in 2015. The decrease in Ultra Broadband Networks gross margin was primarily attributable to higher central cost of sales in Mobile Networks, partially offset by favorable region and product mix, and the completion of a large Fixed Networks project in the Asia-Pacific region.

IP Networks and Applications gross margin in 2016 was 44.1%, compared to 50.9% in 2015. The decrease in IP Networks and Applications gross margin was primarily attributable to changes in the business volume and mix, primarily attributable to the Acquisition of Alcatel Lucent.

Operating expenses

Nokia's Networks business R&D expenses were EUR 3 691 million in 2016, an increase of EUR 1 953 million, or 112%, compared to EUR 1 738 million in 2015. The increase in Nokia's Networks business R&D expenses was primarily attributable to an increase in headcount attributable to the Acquisition of Alcatel Lucent, partially offset by operational and synergy savings. The increase in Nokia's Networks

business R&D expenses was attributable to both Ultra Broadband Networks and IP Networks and Applications. Ultra Broadband Networks R&D expenses were EUR 2 405 million in 2016, an increase of EUR 935 million, compared to EUR 1 470 million in 2015. IP Networks and Applications R&D expenses were EUR 1 286 million in 2016, an increase of EUR 1 018 million, compared to EUR 268 million in 2015.

Nokia's Networks business selling, general and administrative expenses were EUR 2 720 million in 2016, an increase of EUR 1 300 million, or 92%, compared to EUR 1 420 million in 2015. The increase in Nokia's Networks business selling, general and administrative expenses was primarily attributable to an increase in headcount attributable to the Acquisition of Alcatel Lucent, partially offset by operational and synergy savings. The increase in Nokia's Networks business selling, general and administrative expenses was attributable to both Ultra Broadband Networks and IP Networks and Applications. Ultra Broadband Networks selling, general and administrative expenses were EUR 1 936 million in 2016, an increase of EUR 790 million, compared to EUR 1 146 million in 2015. IP Networks and Applications selling, general and administrative expenses were EUR 784 million in 2016, an increase of EUR 510 million, compared to EUR 274 million in 2015.

Nokia's Networks business other income and expenses was an expense of EUR 40 million in 2016, a change of EUR 66 million compared to an income of EUR 26 million in 2015. The change was attributable to both Ultra Broadband Networks and IP Networks and Applications, primarily related to doubtful accounts allowances.

Operating profit

Nokia's Networks business operating profit was EUR 1 935 million in 2016, an increase of EUR 586 million compared to EUR 1 349 million in 2015. Nokia's Networks business operating margin in 2016 was 8.9% compared to 11.7% in 2015. The decrease in operating margin was primarily attributable to Ultra Broadband Networks. Ultra Broadband Networks operating margin decreased from 11.9% in 2015 to 8.6% in 2016. IP Networks and Applications operating margin decreased from 10.4% in 2015 to 9.5% in 2016. The decreases in both Ultra Broadband Networks and IP Networks and Applications operating margins in 2016 were attributable to lower gross margin and higher operating expenses.

For the year ended December 31, 2015 compared to the year ended December 31, 2014

The following table sets forth selective line items and the percentage of net sales for the years indicated.

For the year ended December 31	2015		2014		Year-on-year change %
	EURm	% of net sales	EURm	% of net sales	
Net sales	11 487	100.0	11 144	100.0	3
Cost of sales	(7 006)	(61.0)	(6 755)	(60.6)	4
Gross profit	4 481	39.0	4 389	39.4	2
Research and development expenses	(1 738)	(15.1)	(1 616)	(14.5)	8
Selling, general and administrative expenses	(1 420)	(12.4)	(1 296)	(11.6)	10
Other income and expenses	26	0.2	(38)	(0.3)	—
Operating profit	1 349	11.7	1 439	12.9	(6)

Results of segments continued

Segment information⁽¹⁾

	Ultra Broadband Networks ⁽²⁾ 2015 EURm	IP Networks and Applications ⁽³⁾ 2015 EURm	Networks total ⁽⁴⁾ 2015 EURm	Ultra Broadband Networks ⁽²⁾ 2014 EURm	IP Networks and Applications ⁽³⁾ 2014 EURm	Networks total ⁽⁴⁾ 2014 EURm
For the year ended December 31						
Net sales	10 159	1 328	11 487	9 818	1 326	11 144
Cost of sales	(6 354)	(652)	(7 006)	(6 119)	(636)	(6 755)
Gross profit	3 805	676	4 481	3 699	690	4 389
Research and development expenses	(1 470)	(268)	(1 738)	(1 368)	(248)	(1 616)
Selling, general and administrative expenses	(1 146)	(274)	(1 420)	(1 053)	(243)	(1 296)
Other income and expenses	22	4	26	(27)	(11)	(38)
Operating profit	1 211	138	1 349	1 251	188	1 439

(1) Refer to Note 4. Segment information, of our consolidated financial statements included in this annual report on Form 20-F.

(2) Net sales include EUR 10 023 million (EUR 9 639 million in 2014) attributable to Mobile Networks and EUR 136 million (EUR 179 million in 2014) attributable to Fixed Networks.

(3) Net sales include EUR 515 million (EUR 523 million in 2014) attributable to IP Routing and EUR 813 million (EUR 803 million in 2014) attributable to Applications & Analytics.

(4) Includes Services net sales of EUR 5 424 million (EUR 5 078 million in 2014).

Net sales

Nokia's Networks business net sales in 2015 were EUR 11 487 million, an increase of EUR 343 million, or 3%, compared to EUR 11 144 million in 2014. The increase in Nokia's Networks business net sales was primarily attributable to an increase in net sales in Ultra Broadband Networks. Ultra Broadband Networks net sales were EUR 10 159 million in 2015, an increase of EUR 341 million, or 3%, compared to EUR 9 818 million in 2014. IP Networks and Applications net sales in 2015 were EUR 1 328 million, approximately flat compared to EUR 1 326 million in 2014. Foreign exchange fluctuations had a positive impact on net sales in 2015 compared to 2014.

The following table sets forth distribution of net sales by geographical area for the years indicated.

	2015 EURm	2014 EURm	Year-on-year change %
For the year ended December 31			
Asia-Pacific	3 231	3 283	(2)
Europe	2 805	2 910	(4)
Greater China	1 710	1 374	24
Latin America	970	1 021	(5)
Middle East & Africa	1 177	1 052	12
North America	1 594	1 504	6
Total	11 487	11 144	3

Nokia's Networks business net sales in Greater China increased 24% in 2015 compared to 2014 driven by higher net sales in both Ultra Broadband Networks and IP Networks and Applications.

In Middle East & Africa, net sales increased 12% in 2015 compared to 2014. The overall increase in Middle East & Africa was primarily attributable to growth in several countries in the Middle East.

In North America, net sales increased 6% in 2015 compared to 2014, driven by higher net sales in Ultra Broadband Networks, partially offset by lower net sales in IP Networks and Applications, as well as the absence of non-recurring IPR net sales which benefited 2014.

In Europe, net sales decreased 4% in 2015 compared to 2014. The overall decrease in Europe was primarily attributable to lower net sales in Germany and Russia, partially offset by growth in the United Kingdom.

In Asia-Pacific, net sales decreased 2% in 2015 compared to 2014. The overall decrease in Asia-Pacific was primarily attributable to lower net sales in Japan and South Korea, partially offset by growth in India and Myanmar.

In Latin America, net sales decreased 5% in 2015 compared to 2014. The overall decrease in Latin America was primarily attributable to lower net sales in Brazil, partially offset by growth in Argentina.

Gross margin

Nokia's Networks business gross margin in 2015 was 39.0%, compared to 39.4% in 2014. The slight decrease in Nokia's Networks business gross margin in 2015 was primarily attributable to a lower gross margin in IP Networks and Applications and to a lesser extent to a lower gross margin in Ultra Broadband Networks.

Operating expenses

Nokia's Networks business R&D expenses were EUR 1 738 million in 2015, an increase of EUR 122 million, or 8%, compared to EUR 1 616 million in 2014. The increase was primarily attributable to higher personnel expenses and increased investments in LTE, 5G, small cells and Cloud core, partially offset by continued operational improvements.

Nokia's Networks business selling, general and administrative expenses were EUR 1 420 million in 2015, an increase of EUR 124 million, or 10%, compared to EUR 1 296 million in 2014. In 2015, the increase was primarily attributable to higher personnel expenses, partially offset by a continued focus on cost efficiency.

Nokia's Networks business other income and expenses was an income of EUR 26 million in 2015 compared to an expense of EUR 38 million in 2014, a change of EUR 64 million. The change was primarily attributable to the lower costs related to the sale of receivables, lower net indirect tax expenses and the release of certain doubtful account allowances.

Operating profit

Nokia's Networks business operating profit was EUR 1 349 million in 2015, a decrease of EUR 90 million compared to EUR 1 439 million in 2014. Nokia's Networks business operating margin in 2015 was 11.7% compared to 12.9% in 2014. The decrease in operating profit was primarily attributable to lower operating profit in Ultra Broadband Networks and to a lesser extent to IP Networks and Applications.

Ultra Broadband Networks operating profit decreased from EUR 1 251 million in 2014 to EUR 1 211 million in 2015. The decrease in Ultra Broadband Networks operating profit in 2015 was primarily attributable to higher operating expenses, partially offset by higher gross profit.

IP Networks operating profit was EUR 138 million in 2015 compared to EUR 188 million in 2014. The decrease in IP Networks and Applications operating profit was primarily attributable to higher operating expenses and to a lesser extent to lower gross margin.

Nokia Technologies

For the year ended December 31, 2016 compared to the year ended December 31, 2015

The following table sets forth selective line items and the percentage of net sales for the years indicated.

For the year ended December 31	2016		2015		Year-on-year change %
	EURm	% of net sales	EURm	% of net sales	
Net sales	1 053	100.0	1 027	100.0	3
Cost of sales	(42)	(4.0)	(7)	(0.7)	—
Gross profit	1 011	96.0	1 020	99.3	(1)
Research and development expenses	(250)	(23.7)	(220)	(21.4)	14
Selling, general and administrative expenses	(183)	(17.4)	(109)	(10.6)	68
Other income and expenses	1	0.1	7	0.7	(86)
Operating profit	579	55.0	698	68.0	(17)

Net sales

Nokia Technologies net sales in 2016 were EUR 1 053 million, an increase of EUR 26 million, or 3%, compared to EUR 1 027 million in 2015. The increase in Nokia Technologies net sales was primarily attributable to higher IPR licensing income and the inclusion of Withings' net sales from June 2016 onwards, resulting from the acquisition of Withings, partially offset by the absence of non-recurring adjustments to accrued net sales from existing and new agreements, and lower licensing income from certain existing licensees.

Gross margin

Nokia Technologies gross margin in 2016 was 96.0%, compared to 99.3% in 2015. The decrease in Nokia Technologies gross margin in 2016 was primarily attributable to new, lower gross margin business in digital health from Withings, and to a lesser extent, digital media.

Operating expenses

Nokia Technologies R&D expenses in 2016 were EUR 250 million, an increase of EUR 30 million, or 14%, compared to EUR 220 million in 2015. The increase in R&D expenses in Nokia Technologies was primarily attributable to the inclusion of Bell Labs' patent portfolio costs, resulting from the Acquisition of Alcatel Lucent, and higher investments in the areas of digital media and digital health.

The higher R&D expenses in Digital Health were primarily attributable to the inclusion of Withings' R&D expenses from June 2016. This was partially offset by the focusing of general research investments towards more specific opportunities.

Nokia Technologies selling, general and administrative expenses in 2016 were EUR 183 million, an increase of EUR 74 million, or 68%, compared to EUR 109 million in 2015. The increase in Nokia Technologies selling, general and administrative expenses was primarily attributable to the ramp-up of Digital Health and Digital Media, higher business support costs and increased licensing activity. The higher selling, general and administrative expenses in Digital Health were primarily attributable to the inclusion of Withings' selling, general and administrative expenses from June 2016.

Nokia Technologies other income and expense in 2016 was a net income of EUR 1 million, a decrease of EUR 6 million compared to a net income of EUR 7 million in 2015.

Operating profit

Nokia Technologies operating profit in 2016 was EUR 579 million, a decrease of EUR 119 million, or 17%, compared to an operating profit of EUR 698 million in 2015. The decrease in Nokia Technologies operating profit was primarily attributable to higher selling, general and administrative and R&D expenses. Nokia Technologies operating margin in 2016 was 55.0% compared to 68.0% in 2015.

For the year ended December 31, 2015 compared to the year ended December 31, 2014

The following table sets forth selective line items and the percentage of net sales for the years indicated.

For the year ended December 31	2015		2014		Year-on-year change %
	EURm	% of net sales	EURm	% of net sales	
Net sales	1 027	100.0	632	100.0	63
Cost of sales	(7)	(0.7)	(8)	(1.3)	(13)
Gross profit	1 020	99.3	624	98.7	63
Research and development expenses	(220)	(21.4)	(170)	(26.9)	29
Selling, general and administrative expenses	(109)	(10.6)	(64)	(10.1)	70
Other income and expenses	7	0.7	(1)	(0.2)	—
Operating profit	698	68.0	389	61.6	79

Net sales

Nokia Technologies net sales in 2015 were EUR 1 027 million, an increase of EUR 395 million, or 63%, compared to EUR 632 million in 2014. The increase in Nokia Technologies net sales was primarily attributable to two factors. Firstly, approximately EUR 310 million of Nokia Technologies net sales in 2015 related to non-recurring net sales from existing and new agreements, and revenue share related to previously divested IPR and IPR divestments. Secondly, approximately

EUR 130 million of Nokia Technologies net sales in 2015 related to higher IPR licensing income from existing and new licensees, related to settled and ongoing arbitrations, as well as Microsoft becoming a more significant intellectual property licensee following the Sale of the D&S Business. The increase in net sales was partially offset by lower licensing income from certain existing licensees that experienced decreases in handset sales.

Results of segments continued

Gross margin

Nokia Technologies gross margin in 2015 was 99.3%, compared to 98.7% in 2014. The increase in Nokia Technologies gross margin in 2015 was primarily attributable to higher net sales.

Operating expenses

Nokia Technologies R&D expenses in 2015 were EUR 220 million, an increase of EUR 50 million, or 29%, compared to EUR 170 million in 2014. The increase in R&D expenses was primarily attributable to higher investments in Digital Media and technology incubation, higher patent portfolio costs, and higher investments in digital health.

Nokia Technologies selling, general and administrative expenses in 2015 were EUR 109 million, an increase of EUR 45 million, or 70%, compared to EUR 64 million in 2014. The increase in selling, general and administrative expenses was primarily attributable to the ramp-up of new businesses, increased licensing activities, and higher business support costs.

Nokia Technologies other income and expense in 2015 was a net income of EUR 7 million, a change of EUR 8 million compared to a net expense of EUR 1 million in 2014.

Operating profit

Nokia Technologies operating profit in 2015 was EUR 698 million, an increase of EUR 309 million, or 79%, compared to an operating profit of EUR 389 million in 2014. The increase in operating profit was attributable to higher gross profit, partially offset by higher operating expenses. Nokia Technologies operating margin in 2015 was 68.0% compared to 61.6% in 2014.

Group Common and Other

For the year ended December 31, 2016 compared to the year ended December 31, 2015

The following table sets forth selective line items for the years indicated.

	2016	2015
For the year ended December 31	EURm	EURm
Net sales	1 145	–
Cost of sales	(953)	–
Gross profit	192	–
Research and development expenses	(282)	(84)
Selling, general and administrative expenses	(231)	(97)
Other income and expenses	(21)	92
Operating loss	(342)	(89)

Net sales

Group Common and Other net sales in 2016 were EUR 1 145 million, an increase of EUR 1 145 million, compared to approximately zero in 2015. The increase in Group Common and Other net sales was primarily due to ASN and RFS net sales, both of which related to the Acquisition of Alcatel Lucent.

Gross margin

Group Common and Other gross margin in 2016 was 16.8%. The Group Common and Other gross margin was attributable to gross margin in ASN and RFS, both of which related to the Acquisition of Alcatel Lucent.

Operating expenses

Group Common and Other R&D expenses in 2016 were EUR 282 million, an increase of EUR 198 million, compared to EUR 84 million in 2015. Group Common and Other R&D expenses increased, primarily attributable to Nokia Bell Labs, related to the Acquisition of Alcatel Lucent.

Group Common and Other selling, general and administrative expenses in 2016 were EUR 231 million, an increase of EUR 134 million compared to EUR 97 million in 2015. The increase in Group Common and Other selling, general and administrative expenses was primarily attributable to higher central function costs, related to the Acquisition of Alcatel Lucent.

Group Common and Other other income and expense in 2016 was a net expense of EUR 21 million, a change of EUR 113 million compared to a net income of EUR 92 million in 2015. The change was primarily attributable to the absence of realized gains related to certain investments made through venture funds and the non-cash impairment of certain financial assets.

Operating loss

Group Common and Other operating loss in 2016 was EUR 342 million, an increase of EUR 253 million, compared to an operating loss of EUR 89 million in 2015. The increase in Group Common and Other operating loss was primarily attributable to higher R&D and selling, general and administrative expenses and a net negative fluctuation in other income and expenses, partially offset by higher gross profit.

For the year ended December 31, 2015 compared to the year ended December 31, 2014

The following table sets forth selective line items for the years indicated.

	2015	2014
For the year ended December 31	EURm	EURm
Net sales	–	1
Cost of sales	–	(27)
Gross profit	–	(26)
Research and development expenses	(84)	(73)
Selling, general and administrative expenses	(97)	(132)
Other income and expenses	92	5
Operating loss	(89)	(226)

Group Common and Other operating loss in 2015 was EUR 89 million, a decrease of EUR 137 million, or 61%, compared to an operating loss of EUR 226 million in 2014. The decrease in Group Common and Other operating loss was primarily attributable to change in other income and expense and to a lesser extent to decrease in selling, general and administrative expenses, partially offset by an increase in R&D expenses. Other income and expense in 2015 included net income of approximately EUR 100 million related to investments made through unlisted venture funds, a significant portion of which resulted from Nokia Growth Partners selling its holdings in Ganji.com to 58.com for a combination of cash and shares.

Liquidity and capital resources

Financial position

As of December 31, 2016, our total cash and other liquid assets (defined as cash and cash equivalents; current available-for-sale investments, liquid assets; and investments at fair value through profit and loss, liquid assets) equaled EUR 9 326 million, a decrease of EUR 523 million, compared to EUR 9 849 million as of December 31, 2015. The decrease was attributable to EUR 1 454 million negative cash flow from operating activities, and shareholder distributions including payment of dividends of EUR 1 515 million and repurchases of shares of EUR 216 million. Total cash and other liquid assets also decreased by EUR 3 360 million comprising EUR 2 168 million cash used for repayment of long-term borrowings and EUR 1 192 million cash used for purchase of Alcatel Lucent shares and convertible bonds. Our total cash and other liquid assets also decreased due to capital expenditures of EUR 477 million and cash flows related to acquisitions of EUR 342 million, excluding the Acquisition of Alcatel Lucent. This decrease was partially offset by an increase of EUR 6 558 million related to the acquired cash and other liquid assets of Alcatel Lucent and other net cash inflows relating to investing and financing activities. As of December 31, 2014, our total cash and other liquid assets equaled EUR 7 715 million.

As of December 31, 2016, our net cash and other liquid assets (defined as total cash and other liquid assets less long-term interest-bearing liabilities and short-term borrowings) equaled EUR 5 299 million, a decrease of EUR 2 476 million, compared to EUR 7 775 million as of December 31, 2015. The decrease was primarily attributable to EUR 1 454 million negative cash flow from operating activities, shareholder distributions including payment of dividends of EUR 1 515 million and repurchases of shares of EUR 216 million and EUR 729 million net cash impact arising from the purchase of Alcatel Lucent shares and convertible bonds. The acquisition of Alcatel Lucent increased net cash by EUR 1 970 million comprised of EUR 6 558 million in acquired cash and other liquid assets and EUR 4 588 million related to long-term interest-bearing liabilities and short-term borrowings. As of December 31, 2014, our net cash and other liquid assets equaled EUR 5 023 million.

As of December 31, 2016, our cash and cash equivalents equaled EUR 7 497 million, an increase of EUR 502 million compared to EUR 6 995 million as of December 31, 2015. As of December 31, 2014, our cash and cash equivalents equaled EUR 5 170 million.

Cash flow

2016

Our cash outflow from operating activities in 2016 of EUR 1 454 million decreased by EUR 1 957 million compared to a cash inflow of EUR 503 million in 2015. The decrease was primarily attributable to a EUR 2 207 million increase in net working capital in 2016 compared to a EUR 1 377 million increase in 2015 and a decrease in net profit, adjusted for non-cash items of EUR 727 million. The primary driver for the increase in net working capital related to a decrease in liabilities of EUR 2 758 million in 2016 compared to a decrease of EUR 990 million in 2015, partially offset by a decrease in inventories of EUR 533 million in 2016 compared to a decrease of EUR 341 million in 2015. The decrease in liabilities mainly related to restructuring cash outflows, reductions in liabilities related to our actions to harmonize working capital processes and practices, termination of Alcatel Lucent's license agreement with Qualcomm, the payment of incentives related to Alcatel Lucent's and Nokia's strong business performance in 2015 and the impact of foreign exchange fluctuations.

The decrease in cash flow from operating activities was also attributable to a EUR 400 million increase in cash outflows related to net interest and income taxes paid in 2016 and 2015 of EUR 727 million and EUR 327 million, respectively. Interest paid includes cash outflows from the premium paid for the redemption of Alcatel Lucent bonds and notes related to our capital structure optimization program. Income taxes paid include a non-recurring tax payment due to the integration of the former Alcatel Lucent and former Nokia operating models into one combined operating model.

In 2016, our cash inflow from investing activities equaled EUR 6 836 million, representing an increase of EUR 4 940 million compared to EUR 1 896 million cash inflow from investing activities in 2015. The increase in cash inflow from investing activities was primarily driven by cash and cash equivalents acquired as part of the Acquisition of Alcatel Lucent and an increase in proceeds from maturities and sale of current available-for-sale investments, liquid assets partially offset by purchase of current available-for-sale investments and liquid assets.

In 2016, our capital expenditure equaled EUR 477 million, an increase of EUR 163 million, as compared to EUR 314 million in 2015. Major items of capital expenditure in 2016 included investments in R&D equipment, test equipment, hardware for Telco and Cloud environment, plants, buildings and construction for transformation projects, repair or improvements of sites as well as intangible rights.

In 2016, our cash outflow from financing activities of EUR 4 923 million increased by EUR 4 343 million in comparison to our cash outflow of EUR 580 million in 2015. The increase in cash outflows was primarily driven by the repayment of long-term borrowings of EUR 2 599 million mainly including the redemption of Alcatel Lucent bonds and notes related to our capital structure optimization program, paid dividends of EUR 1 515 million primarily related to the payment of the ordinary and special dividends, purchase of equity instruments of subsidiaries of EUR 724 million related to the purchase of Alcatel Lucent shares and the equity component of the purchased Alcatel Lucent convertible bonds and EUR 216 million cash outflow related to the commencement of Nokia's share repurchasing program.

Liquidity and capital resources continued

2015

Our cash inflow from operating activities in 2015 of EUR 503 million decreased by EUR 772 million compared to the cash inflow of EUR 1 275 million in 2014. The decrease was primarily attributable to EUR 1 377 million cash being tied up in net working capital in 2015 compared to EUR 988 million cash release in 2014, partially offset by an increase in net profit, adjusted for non-cash items of EUR 993 million. The primary drivers of the increase in net working capital were higher accounts receivables, mainly relating to the Samsung patent license receivables and lower accounts payable.

In 2015, our cash inflow from operating activities also included cash outflows of EUR 327 million related to net interests and taxes paid, a decrease of EUR 600 million compared to EUR 927 million cash outflows in 2014. The decrease was primarily attributable to lower net income taxes paid. Paid taxes in 2014 included approximately EUR 300 million cash outflows relating to Discontinued operations.

In 2015, our cash flow from investing activities equaled EUR 1 896 million, an increase of EUR 1 010 million compared to EUR 886 million cash received from investing activities in 2014. Cash inflow from investing activities was primarily driven by gross proceeds attributable to the Sale of the HERE Business of approximately EUR 2 540 million, and the increase in proceeds from maturities and sale of current available-for-sale investments and liquid assets. The increase was partially offset by an increase in purchases of current available-for-sale investments, liquid assets, purchases of investments at fair value through profit and loss, liquid assets and cash outflows related to capital expenditure of EUR 314 million and acquisitions of EUR 98 million.

In 2015, our capital expenditure equaled EUR 314 million, an increase of EUR 3 million compared to EUR 311 million in 2014. Major items of capital expenditure in 2015 included investments in production lines, test equipment and computer hardware used primarily in R&D, office and manufacturing facilities as well as services and software-related intangible assets.

In 2015, our cash outflow from financing activities equaled EUR 580 million, a decrease of EUR 3 996 million compared to EUR 4 576 million cash outflow in 2014. Cash outflows from financing activities were primarily attributable to the payment of EUR 0.14 per share in dividends equaling EUR 507 million and EUR 173 million in cash outflows relating to share repurchases. Cash outflows from financing activities also included payments to non-controlling interest holders to acquire subsidiary shares and pay dividends equaling EUR 57 million.

Financial assets and debt

As of December 31, 2016, our net cash and other liquid assets equaled EUR 5 299 million and consisted of EUR 9 326 million in total cash and other liquid assets and EUR 4 027 million of long-term interest-bearing liabilities and short-term borrowings.

We hold our cash and other liquid assets predominantly in euro. Our liquid assets are mainly invested in high-quality money-market and fixed income instruments with strict maturity limits. We also have a EUR 1 579 million undrawn revolving credit facility available for liquidity purposes.

Our interest-bearing liabilities consisted of a EUR 500 million bond due in 2019, a USD 1 000 million bond due in 2019, a USD 300 million bond due in 2028, a USD 1 360 million bond due in 2029, a USD 500 million bond due in 2039 and EUR 464 million of other liabilities. The bonds maturing in 2019 and 2039 are issued by Nokia Corporation, while the bonds maturing in 2028 and 2029 are issued by Lucent Technologies Inc., (the predecessor to Alcatel-Lucent USA Inc., Nokia's wholly-owned subsidiary). Refer to Note 23, Interest-bearing liabilities, of our consolidated financial statements included in this annual report on Form 20-F for further information regarding our interest-bearing liabilities.

In June 2016, we exercised our options to increase the size of our EUR 1 500 million revolving credit facility to EUR 1 579 million and to extend the maturity date from June 2018 to June 2019. The facility has a one-year extension option remaining, no financial covenants and it remains undrawn.

In January 2016, Alcatel Lucent SA repaid its EUR 190 million 8.50% senior notes. In February, 2016, Alcatel-Lucent USA Inc. redeemed its USD 650 million 4.625% notes due in July 2017, USD 500 million 8.875% notes due in January 2020 and USD 700 million 6.750% notes due in November 2020 in accordance with their respective terms and conditions. In February 2016, Alcatel Lucent SA terminated its EUR 504 million revolving credit facility. In March 2016, ASNs' EUR 74 million credit facility was repaid.

As part of the public exchange offer to acquire Alcatel Lucent 2018 OCEANE, 2019 OCEANE and 2020 OCEANE convertible bonds with nominal amounts of EUR 381 million, EUR 238 million and EUR 293 million respectively, were tendered for exchange into Nokia shares. As a result, less than 15% of the 2018 OCEANE convertible bonds remained outstanding, and the Group caused Alcatel Lucent SA to redeem at par value plus accrued interest all of the outstanding 2018 OCEANE convertible bonds pursuant to the terms and conditions of the bonds. Subsequently during 2016 the remaining outstanding 2019 OCEANE and 2020 OCEANE convertible bonds with nominal amounts of EUR 402 million and EUR 136 million respectively, were either put back, acquired in privately negotiated transactions, or acquired through the public buy-out offer followed by a squeeze-out for an aggregate cash payment of EUR 562 million. Refer to Note 31, Notes to the consolidated statement of cash flows and Note 23, Interest-bearing liabilities, of our consolidated financial statements included in this annual report on Form 20-F for further information regarding these transactions.

We believe, with EUR 9 326 million of cash and other liquid assets as well as a EUR 1 579 million revolving credit facility, that we have sufficient funds available to satisfy our future working capital needs, capital expenditures, R&D investments, acquisitions and debt service requirements at least through 2017. We further believe, with our current credit ratings of BB+ by Standard & Poor's and Ba1 by Moody's, that we have access to the capital markets should any funding needs arise in 2017.

We aim to re-establish our investment grade credit rating.

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, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that are material to investors, except for purchase obligations and leasing commitments, as well as guarantees and financing commitments as disclosed in Note 30, Commitments and contingencies, of our consolidated financial statements included in this annual report on Form 20-F.

Capital structure optimization program

In 2015, we announced a two-year, EUR 7 billion program to optimize the efficiency of our capital structure (our "capital structure optimization program"). The capital structure optimization program was initially subject to the closing of the Acquisition of Alcatel Lucent and the Sale of the HERE Business, as well as the conversion of all Nokia and Alcatel Lucent OCEANE convertible bonds. The Sale of the HERE business closed in December 2015. The result of the successful offer for Alcatel Lucent securities was announced on January 5, 2016 and 100% ownership was reached on November 2, 2016. However, not all convertible bonds were converted.

As of December 31, 2016, we have completed the following shareholder distributions as part of our capital structure optimization program:

- ordinary dividend for 2015 of EUR 0.16 per share, totaling EUR 924 million, paid in July 2016;
- special dividend of EUR 0.10 per share, totaling EUR 577 million, paid in July 2016;
- on October 27, 2016, the originally intended EUR 1.5 billion share repurchase program was adjusted to EUR 1.0 billion, after we had used approximately EUR 560 million in cash during 2016 to acquire Alcatel Lucent securities in order to reach the 95% squeeze-out threshold. We consider these acquisitions as indirect share repurchases, and thus, part of the initially planned EUR 1.5 billion share repurchase program;
- on November 16, 2016, we commenced our share repurchase program up to an equivalent amount of EUR 1.0 billion or a maximum of 575 million shares. Thereafter, in 2016, EUR 216 million was used for share repurchases under the program; and
- between January 1, 2017 and March 10, 2017, EUR 159 million was used for share repurchases under the program.

Our capital structure optimization program further included a part to de-leverage by approximately EUR 3 billion. In 2016, we took the following actions to reach our target:

- Alcatel Lucent SA repaid its EUR 190 million 8.50% senior notes and terminated its EUR 504 million revolving credit facility;
- Alcatel-Lucent USA Inc., a subsidiary of Alcatel Lucent SA, redeemed its USD 650 million 4.625% notes due in July 2017, USD 500 million 8.875% notes due in January 2020 and USD 700 million 6.750% notes due in November 2020 in accordance with their respective terms and conditions; and
- approximately EUR 1.0 billion reduction in the sale of receivables (debt-like items).

We intend to execute the following shareholder distributions during 2017 to complete the capital structure optimization program:

- ordinary dividend for 2016 of EUR 0.17 per share, subject to shareholder approval at the Annual General Meeting on May 23, 2017; and
- continue the share repurchase program until we have reached the threshold of EUR 1.0 billion, or acquired the maximum allowed 575 million shares.

Refer to "—Dividend" below for the Board's dividend proposal for 2016.

Liquidity and capital resources continued

Structured finance

Structured finance includes customer financing and other third-party financing. Network operators occasionally require their suppliers, including us, to arrange, facilitate or provide long-term financing as a condition for obtaining infrastructure projects.

As of December 31, 2016, our total customer financing, outstanding and committed, equaled EUR 352 million, an increase of EUR 139 million as compared to EUR 213 million in 2015. As of December 31, 2014, our total customer financing, outstanding and committed, equaled EUR 156 million. Customer financing primarily consisted of financing commitments to network operators.

Refer to Note 36, Risk management, of our consolidated financial statements included in this annual report on Form 20-F for further information relating to our committed and outstanding customer financing.

We expect our customer financing commitments to be financed mainly from cash and other liquid assets and through cash flow from operations.

As of December 31, 2016, guarantees of our performance consisted of bank guarantees given on behalf of Nokia to its customers for EUR 1 805 million (EUR 400 million as of December 31, 2015). In addition, Nokia Corporation issued corporate guarantees directly to Nokia customers with primary obligation for EUR 88 million (EUR 74 million as of December 31, 2015) and such corporate guarantees issued by certain Alcatel Lucent entities for EUR 1 520 million. These instruments entitle the customer to claim payments as compensation for non-performance by Nokia of its obligations under network infrastructure supply agreements. Depending on the nature of the instrument, compensation is either payable on demand, or is subject to verification of non-performance. Due to certain differences in the business and a less centralized guarantee process, bank guarantees as well as corporate guarantees with primary obligation were used to a larger extent by Alcatel Lucent.

Financial guarantees and securities pledged that we may give on behalf of customers, represent guarantees relating to payment by certain Nokia customers and other third parties under specified loan facilities between such customers or other third parties and their creditors. Our obligations under such guarantees are released upon the earlier of expiration of the guarantee or early payment by the customer or other third party.

Refer to Note 30, Commitments and contingencies, of our consolidated financial statements included in this annual report on Form 20-F for further information regarding commitments and contingencies.

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 Nokia Growth Partners which specializes in growth-stage investing, seeking companies that are changing the face of mobility and connectivity.

As of December 31, 2016, our unlisted venture fund investments equaled EUR 819 million, as compared to EUR 953 million as of December 31, 2015. Refer to Note 24, Fair value of financial instruments, of our consolidated financial statements included in this annual report on Form 20-F for further information regarding fair value of our unlisted venture fund investments.

As of December 31, 2016, our venture fund commitments equaled EUR 525 million, as compared to EUR 230 million as of December 31, 2015. 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. Refer to Note 30, Commitments and contingencies, of our consolidated financial statements included in this annual report on Form 20-F for further information regarding commitments and contingencies.

Treasury policy

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

Material subsequent events

After December 31, 2016, the following material events have taken place.

- In January 2017, as part of continuing changes to our operating model, we transferred certain intellectual property between our operations in Finland and the United States, which is expected to result in an approximately EUR 250 million negative non-recurring impact on tax expense in the first quarter of 2017, but no material cash tax outflow.
- On January 31, 2017, we acquired 100% ownership interest in Deepfield Networks Inc., a United States-based leader in real-time analytics for IP network performance management and security.
- On February 8, 2017, we entered into a transaction agreement with Comptel Corporation ("Comptel"), a Finnish publicly listed company, whereby we undertake to make a voluntary public cash tender offer to purchase all of the issued and outstanding shares and option rights in Comptel that are not owned by Comptel or any of its subsidiaries. The price offered for each share validly tendered in the tender offer will be EUR 3.04 in cash. The tender offer values Comptel at approximately EUR 347 million, on a fully diluted basis.
- On February 22, 2017, we announced that we had commenced a tender offer to purchase the outstanding EUR 500 million 6.75% notes due February 4, 2019 issued by Nokia Corporation (the "2019 Euro Notes") and the outstanding USD 300 million 6.50% notes due January 15, 2028 (the "2028 Dollar Notes") and USD 1 360 million 6.45% notes due March 15, 2029 (the "2029 Dollar Notes") issued by Lucent Technologies Inc., (the predecessor to Alcatel-Lucent USA Inc., Nokia's wholly-owned subsidiary) up to a maximum cash consideration of USD 1 000 million (the "Tender Offer"). The purpose of the Tender Offer is to manage our overall indebtedness. Following the settlement of the Tender Offer, we expect to cancel any euro-denominated notes purchased pursuant to the Tender Offer and to hold any U.S. dollar-denominated notes. On March 21, 2017, the Tender Offer expired. We received tenders for 53.76% (EUR 268.8 million) of the 2019 Euro Notes, 28.66% (USD 86.0 million) of the 2028 Dollar Notes and 29.48% (USD 400.9 million) of the 2029 Dollar Notes. We expect to settle the Tender Offer on March 23, 2017.
- On March 15, 2017, we issued EUR 500 million 1.00% Senior Notes due 2021 and EUR 750 million 2.00% Senior Notes due 2024 under our 5 000 000 000 Euro Medium-Term Note Programme. The proceeds of the new notes are intended to fund the Tender Offer, and for general corporate purposes.

On March 17, 2017, we announced changes in our organizational structure and Group Leadership Team, effective from April 1, 2017.

The organizational changes include the separation of our current Mobile Networks business group into two distinct, but closely linked, organizations: (1) Mobile Networks, focused on products and solutions and (2) Global Services, focused on services. In addition, our Chief Innovation and Operating Officer ("CIOO") organization will be split, with its current operating activities moved to a newly-appointed Chief Operating Officer ("COO") organization, innovation activities to our Chief Technology Officer and incubation to our Chief Strategy Officer.

The leadership changes include the following:

- Marc Rouanne, currently Chief Innovation and Operating Officer, will become President of the Mobile Networks business group.
- Igor Leprince, currently Executive Vice President of Global Services, will join the Group Leadership Team and assume the role of President of Global Services, a new business group comprised of the Services organization that currently resides within the existing Mobile Networks business group.
- Monika Maurer, currently Chief Operating Officer of Fixed Networks, will join the Group Leadership Team and assume the role of Group COO, responsible for Nokia's operating model, Global Operations (manufacturing and supply chain), procurement, implementation of cost saving and ongoing transformation activities, information technology, real estate, and quality.
- Marcus Weldon, currently President of Nokia Bell Labs and Chief Technology Officer, will join the Group Leadership Team and retain current responsibilities.
- Kathrin Buvac, Chief Strategy Officer, will assume additional responsibilities for incubation of select new business opportunities, and Barry French, Chief Marketing Officer, will assume additional responsibilities for Health, Safety, Security and Environment.
- Samih Elhage will continue in his current role and as a member of the Group Leadership Team until April 1, 2017, and will remain as an advisor to the company through May 31, 2017.

We will continue to report financial information for Ultra Broadband Networks, IP Networks and Applications and Nokia Technologies. Ultra Broadband Networks will be composed of the Mobile Networks, Global Services and Fixed Networks business groups. IP Networks and Applications is composed of the IP/Optical Networks and Applications & Analytics business groups.

Sustainability and corporate responsibility

We are shaping the future of technology to transform the human experience and improve people's lives and we aim to achieve that by conducting our business in a responsible manner. We align with globally recognized ethical and responsible business practices and frameworks, putting in place the processes, policies and programs to achieve our aim.

Managing sustainability

Our Sustainability vision and priorities

Our sustainability vision remained unchanged in 2016—to design technologies that enable the human possibilities of the connected world while making it more productive, healthy and sustainable. We drive this through the following renewed priorities: improving people's lives with technology, protecting the environment, conducting our business with integrity and respecting our people.

Sustainability and corporate responsibility issues are reviewed regularly at all levels within Nokia, including by the Nokia Board of Directors (the "Board"). Our sustainability strategy and governance were realigned to our renewed strategy and business focus and new governance was implemented in 2016.

Sustainability performance and materiality assessment

In 2016, we reviewed and updated our materiality analysis whereby we systematically analyzed stakeholder requirements, our influence on sustainable development throughout the value chain, industry cooperation and the UN's Sustainable Development Goals. In total, we evaluated more than 40 sustainability issues that affect our short, medium, and long-term corporate strategy. Each issue was carefully defined and weighed against its impact on our commercial success and sustainable development.

The results of the materiality assessment helped us identify key issues and to focus our efforts on the benefits of connectivity and sustainable products, environmental impact and climate change challenges, ethical business practices and the increasing need for data privacy and freedom of expression, supply chain responsibility, health & safety and employee engagement as well as diversity. Please refer to our forthcoming 2016 Sustainability Report at www.nokia.com/people&planet for further details of the materiality assessment.

In 2016, we published 25 targets reflecting our commitment to sustainable development. Our sustainability strategy and reporting framework conform to key regulatory, investor and customer requirements and globally recognized sustainability frameworks. Our Sustainability Report is prepared in accordance with the GRI sustainability reporting guidelines. In 2016, we incorporated information on our sustainability activities based on the 21 UN Global Compact advanced level assessment criteria.

EcoVadis is one of the evaluation platforms through which we provide annual sustainability information for evaluation which is then shared with customers as required. In 2016, we were judged "Outstanding", the highest level in the gold category with a score of 85/100. We were in the top 1% of suppliers assessed, achieving excellent scores in environment, labor practices, and supply chain management. In 2016, we retained our listing in the Dow Jones Sustainability Index with a score of 83/100 and were ranked leader of the CMT communication equipment sector.

Other recognition included being ranked a leader in the CDP (formerly Carbon Disclosure Project) for our work on and disclosure of climate change data and being listed in the World and Europe 120 indices of Euronext Vigeo. We reconfirmed our position in the Ethibel Sustainability Indices and were awarded best-in-class in human rights and climate change reporting in the Sustainability Reporting Competition in Finland.

We have provided detailed reports on our progress and performance in sustainability and corporate responsibility matters annually, and online for over a decade. For further information, refer to our People and Planet report at http://www.nokia.com/en_int/about-us/sustainability.

Improving people's lives through connectivity

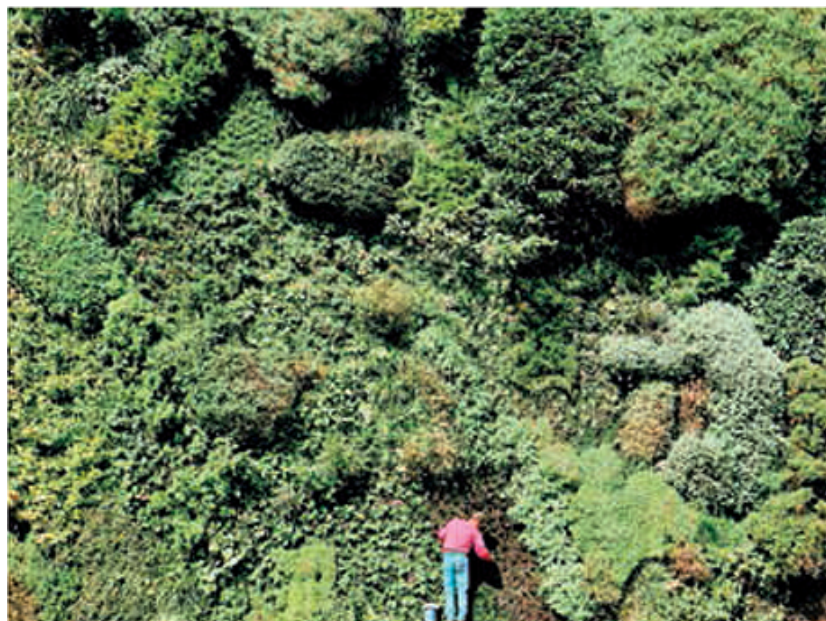
The development of technologies such as 5G and IoT is expected to enable more people and billions of things to be connected, helping to realize smart innovations in cities and homes, access to digital health and greater public safety. We can have the greatest impact on sustainable development through our main business of delivering networks, technology solutions and services to operators, enterprises and organizations. Through our end-to-end portfolio, our technology can connect the unconnected, increase efficiency and productivity, and drive greater economic growth to improve the lives of people across the globe.

43%

The networks we modernized brought on average energy savings of 43% for our customers

1 900

Over 1 900 of our leaders were trained on gender balance topics in 2016



Our radio networks' customers serve around 5.5 billion subscriptions worldwide. In May 2016, we introduced our ultra-compact network solution, providing a lightweight standalone LTE network, which can re-establish connectivity within minutes where existing communications are down. With satellite, microwave or cable link, it can connect rescue teams to emergency services, hospitals and other teams in any location. This technology is also part of our Nokia Saving Lives innovation initiative, in which we combine the capabilities of the ultra-compact LTE network with drone video applications for search and rescue missions.

Our digital health strategy, reinforced through our acquisition of Withings, centers on empowering people (i.e. by making health monitoring more accessible). Building on Nokia's track record of innovation, we are now positioned to help people live healthier lives through a portfolio of smart health solutions that are reliable, easy to use and grounded in human-centered design—qualities Nokia customers have come to expect.

Through our corporate community investment programs we rolled out a new project in Myanmar in which technology plays a key role in improving early childhood care and development monitoring. We have, together with Save the Children, developed a web-based database and synchronized mobile application which is currently being deployed, intended to replace slow, non-real-time paper-based data collection used during care center monitoring visits.

During a visit, the application enables saving of data on your mobile phone when offline and uploading it when online again. This is particularly important in parts of Myanmar, and elsewhere, where there is limited network coverage today.

Protecting the environment

We believe we can directly support the fight against climate change by reducing the energy usage of the products we deliver to our customers. We aim to minimize our own operations' footprint while also creating and delivering solutions that help our customers and other industries minimize theirs. For example, we offer an Asset Recovery Service as part of product lifecycle management. In 2016, we sent around 2 450 metric tons of old telecommunications equipment for materials recovery and we refurbished approximately 85 800 units.

Our environmental management system helps us monitor our progress and identify ways to improve further. We manage our own footprint through continued certification to ISO 14001 environmental management standard and our performance is audited regularly by external auditors.

In 2016, we continued working towards improving our energy efficiency and controlling waste across our business. Our total energy consumption across our facilities decreased by approximately 9%, as compared to 2015, which, consequently, reflected a decrease of approximately 16% in our greenhouse gas emissions, including our renewable energy usage. We further reduced the carbon intensity (CO₂ e/km) of our car fleet by 8%, as compared to 2015. Overall, the undertaken actions in our operations in 2016 reduced our total Scope 1 & 2 emissions by 10%, including emissions from our own marine fleet. (In this paragraph, we compare our 2016 results to our 2015 results which represent the combined amounts of Nokia and Alcatel Lucent in 2015.)

Our actions were further supported by customer deployment of AirScale base stations which feature new software that reduces radio module and system module energy consumption and even use zero energy in the absence of network traffic. In 2016, we modernized 27% more base stations than in 2015, achieving average energy savings of 43% for our customers compared to non-modernized networks. This reduces the environmental impact of electricity consumption and is directly reflected as increased financial benefits for our customers. We also acquired Eta Devices that specialize in power amplifier efficiency to support our goal of improved energy efficiency.

Sustainability and corporate responsibility continued

Running our business with integrity

Ethical business

We conduct business based on defined high ethical standards and apply our Code of Conduct across our operations, which allows us to build and maintain personal integrity and protect our reputation. We emphasize the implementation and understanding of the Code of Conduct across our workforce, sales and supplier interactions. All our employees are expected to comply with our Code of Conduct.

Leadership involvement and oversight of ethics and compliance are provided by the Board via the Audit Committee, which convened eight times in 2016. Compliance management is further supported by both global and regional compliance committees.

Employees and external stakeholders are urged to report any ethical misconduct using our compliance hotline which allows for anonymous reporting. In 2016, our Ethics & Compliance office received 637 concerns, of which 228 were investigated by Ethics & Compliance Investigations as alleged violations of our Code of Conduct. We also implemented corrective actions including 17 dismissals and 40 written warnings following these and other investigations. We also track how our employees feel about raising concerns through a bi-monthly internal anonymous survey on whether our employees are comfortable raising concerns.

We also work hard to ensure the technology we provide is not used to infringe human rights, including the right to privacy, freedom of expression and assembly. We further work closely with our supply chain to encourage adherence to the same standards of ethical business to help ensure responsible sourcing and globally acceptable labor practices.

Human rights, freedom of expression and privacy

In 2016, in order to mitigate the risks of potential misuse of our products and increase transparency, we updated our Human Rights Policy and followed up with training to all relevant groups within Nokia. We run human rights due diligence processes as part of our global sales process, in order to further mitigate potential risks and cases of misuse. We are a founding member of the Telecommunications Industry Dialogue Group ("ID") and, as of October 2016, Nokia chairs the group. Since February 2016, we have had official observer status with the Global Network Initiative ("GNI"), with an aim of becoming a full member in March 2017.

Responsible sourcing

We regularly run robust assessments with our supplier network to support them in meeting our ethical standards and improving performance where necessary. In 2016, we implemented 390 supply chain audits, which included 45 on-site audits on Corporate Responsibility topics; 39 were on-site audits against our supplier requirements and 306 suppliers were audited using the EcoVadis scorecards. Additionally, we run training workshops for suppliers operating in high-risk countries. In 2016, we organized online training on conflict-free sourcing and climate change, and we arranged face-to-face training workshops establishing improvement plans and actions for 238 suppliers.

We work closely with our supply chain to jointly create environmental improvement programs and better our upstream Scope 3 emissions reporting (overall Scope 3 means all indirect emissions that occur in our value chain, including upstream and downstream) through the CDP Supply Chain Program. In 2016, 243 of our key suppliers responded to the CDPs request to disclose their climate performance information and 127 also provided emission reduction targets.

The traceability of our materials and ensuring our products are conflict-free is a priority for us, which is also reflected in our updated Conflict Minerals Policy. In 2016, 84% of smelters identified as part of Nokia's supply chain have been validated as conflict-free or are active in the validation process. Refer to our conflict minerals report available at http://www.nokia.com/en_int/about-us/sustainability/downloads.

Respecting our people

In a year of integration, we emphasized a firm understanding of Nokia's vision, values and culture through training, town hall meetings and communication. We measure cultural cohesion through our Cultural Cohesion Tracker survey five times a year, and in 2016 understanding of Nokia's vision rose from 85% favorable to 88%. In addition, one building block of the Cultural Cohesion Tracker is "Understanding New Nokia Mindset", which contains questions focused on behaviors, values, ethics and emotional connection and received 83% favorability at the end of 2016. We received over 70 000 responses covering a range of aspects of working for Nokia.

The Nokia Code of Conduct also underpins our own labor conditions, along with the human resources policies that underline our approach to fair employment.

We focus on ensuring that all our employees and contractors are aware of the risks related to their jobs and receive the necessary training and equipment to work safely—whether in the office or on site. We address job-related health and safety risks through training, analysis, assessments and consequence management. We have put in place a wide range of programs to improve our health and safety performance and encourage reporting of near misses and dangerous incidents by employees and contractors.

We realize that our employees must be positively engaged for our business to be successful. In 2016, our employee engagement index showed a 76% favorability towards the company. We offer training, development programs, comprehensive reward packages and flexible working as part of our effort to motivate and show that we value our employees and the work they do. In 2016, each employee spent an average of approximately 19 hours on training. Additionally, we arrange a one-hour dialog session every quarter between the line manager and each team member, which covers objective setting and review of results, individual development, employee well-being and engagement, coaching by the line manager, and mutual feedback.

The health, sports and activity programs we offer our employees contribute to cost savings in terms of reduced sick leave days.

Diversity, inclusion and anti-discrimination are key to our employee makeup. In 2016, approximately 14% of our senior management positions were held by women and over 1 900 leaders were trained on gender balance topics. In total, women accounted for 22% of Nokia's workforce in 2016. Nokia's employee-driven program, StrongHer, was selected by the ITU as an example of how to bridge the gender digital divide in corporations in 2016. The average age of our employees in 2016 was 40 years.

Making change happen together

To achieve our sustainability goals, we collaborate closely with suppliers, customers, non-governmental organizations ("NGOs"), authorities and industry peers, not only supporting them in achieving their sustainability goals but also driving the sustainability of our products and solutions.

Working with NGOs

As part of our ongoing work with NGOs, we have created a Group-wide corporate community investment approach with three key pillars—to connect the unconnected, to empower women, and to save lives. Our contribution focuses on how technology can improve access to better health, education and information, and ultimately drives social, environmental and economic progress.

In addition to multi-year signature programs with Plan International, Save the Children and Oxfam, we have approved and planned new signature programs for launch in 2017 with e.g. UNICEF, Greenlight for Girls and Junior Achievement. We also work with smaller charities whose programs use technology to improve lives. In 2016, through Nokia Corporate Community Investment and the Alcatel-Lucent Foundation, we contributed corporate-level resources totaling EUR 3 million, which supported 42 community organizations.

Cooperating with others in our industry and beyond

We are a member of the United Nations Global Compact, Global e-Sustainability Initiative, CDP supply chain program, ID, Climate Leadership Council, Digital Europe, Conflict-Free Sourcing Initiative and several standardization and university cooperation groups. We have further structured engagement with the World Economic Forum, the Broadband Commission and ITU Telecom World, amongst others. In 2016, we became a member of the GSMA Humanitarian Connectivity Charter. Working with ID, we also made a submission to the UN Special Rapporteur on freedom of opinion and expression to support his forthcoming study.

We also collaborate with the public sector to further the use of technology in enhancing sustainable development and improving the day-to-day lives of citizens. In 2016, we joined the Bristol Is Open initiative, becoming the first major telecommunications vendor to participate in Bristol's unique living laboratory, underlining our commitment to smart city solutions. In support of the UN's Refugee agency, we provided a Nokia OZO VR camera and equipment to The Humanitarian Cooperative to enable the creation of a film to raise awareness of, and action on, the current refugee crisis.

Employees

In 2016, the average number of Nokia employees was 102 687 (56 690 in 2015 and 51 499 in 2014). The total amount of salaries and wages paid in 2016 was EUR 6 275 million (EUR 3 075 million in 2015 and EUR 2 797 million in 2014). Refer to Note 9, Personnel expenses, of our consolidated financial statements in this annual report on Form 20-F.

The table below shows the average number of employees in 2016, divided according to business and geographical location:

Business	Average number of employees
Networks business	99 243
Nokia Technologies	790
Group Common Functions	2 654
Total	102 687
Region	Average number of employees
Finland	6 564
Other European countries	31 550
Middle East & Africa	4 024
China	18 929
Asia-Pacific	22 007
North America	15 560
Latin America	4 053
Total	102 687



Dividend

The Board proposes a dividend of EUR 0.17 per share for 2016.

The proposed dividend is in line with our distribution policy.

We distribute retained earnings, 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, share buy-backs, 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, if any, will depend on our future results and financial conditions.

Under the Finnish Companies Act, we may distribute retained earnings 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 accounts approved by our shareholders, taking into account the material changes in the financial situation of the 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 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.



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 annual report on Form 20-F. 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, sales, profitability, results of operations, financial condition, competitiveness, costs, expenses, liquidity, market share, brand, reputation 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 Nokia or a certain business group, business or part of the Group.

Additional risks and uncertainties not presently known to us, or that are currently believed to be immaterial, could impair our business or the value of an investment made in it. This annual report on Form 20-F also contains forward-looking statements that involve risks and uncertainties presented in “Forward-looking statements” above.

Our strategy is subject to various risks and uncertainties and 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 or otherwise grow our business.

We announced our strategy to become a technology leader in the Programmable World in April 2014, which we have since endeavored to implement, most recently through the Acquisition of Alcatel Lucent and the Sale of the HERE Business. In November 2016, we announced key financial and strategic targets as well as our updated strategy at our Capital Markets Day event. For further information refer to “Business Overview—Our strategy” and “Operating and financial review and prospects—Principal industry trends affecting operations”.

We operate in rapidly changing and innovative industries and the opportunities we pursue may require significant investments in innovation in order to generate growth, profitability or other targeted benefits across our business groups. Our strategy, which includes targeted investments in our business and pursuing new business opportunities based on identified trends and opportunities, may not yield a return on our investment as planned or at all. Our ability to achieve strategic goals and targets is subject to a number of uncertainties and contingencies, certain of which are beyond our control, and there can be no assurance that we will correctly identify trends or opportunities to pursue or be able to achieve the goals or targets we have set. We continuously target various improvements in our operations and efficiencies through investing in R&D, entering into licensing arrangements, acquiring businesses and technologies, recruiting expert employees and partnering with third parties. There can be no assurance that our efforts will generate the expected results or improvements in our operations or that we will achieve our intended targets or financial objectives related to such efforts. Any failure to achieve our strategy may materially and adversely affect our business, financial condition and results of operations. Furthermore, there can be no assurance that our investments will result in technologies, products or services that achieve or retain broad or timely market acceptance, answers to the expanding needs or preferences of our customers or consumers, or break-through innovations that we could otherwise utilize for value creation.

As part of our strategy, we have and may continue to acquire or divest assets. For instance, we announced in February 2017 our intention to acquire Comptel to advance our software strategy. We may fail to complete planned acquisitions or divestments or to integrate acquired businesses or assets. Any such result could interfere with our ability to achieve our strategy, obtain intended benefits, retain and motivate acquired key employees, or timely discover all liabilities of acquired businesses or assets, which may have a material adverse effect on our business. In particular, failure to integrate Alcatel Lucent or to achieve the expected synergies or other benefits from the Acquisition of Alcatel Lucent could materially and adversely affect our business, financial condition and results of operations.

We may be unable to realize the anticipated benefits, including synergies, cost savings or efficiencies, from the Acquisition of Alcatel Lucent, and we may encounter issues or inefficiencies related to our new organizational and operational structure, including not being able to successfully implement our business plans and to integrate Alcatel Lucent’s business.

We have allocated, and will continue to allocate, significant resources to integrate Alcatel Lucent’s business and implement our business plans and strategy. Achieving the anticipated benefits, synergies and other efficiencies from the Acquisition of Alcatel Lucent will depend largely on the timely and efficient integration of the business operations of Nokia and Alcatel Lucent and the combined company’s ability to successfully implement our business plans. Despite our progress in the integration, there can be no assurance that the overall integration of Alcatel Lucent will be successful or yield expected benefits and results. The integration process involves certain risks and uncertainties, some of which are outside our control, and there can be no assurance that we will be able to realize the intended organizational and operational benefits related to our business plans in the manner or within the timeframe currently anticipated. Such risks and uncertainties include, among others, the distraction of our management’s attention from our business resulting in performance shortfalls, the disruption of our ongoing business, interference with our ability to maintain our relationships with customers, vendors, regulators and employees and inconsistencies in our services, standards, controls, procedures and policies, any of which could have a material adverse effect on our business, financial condition and results of

Risk factors continued

operations. Potential challenges that we may encounter regarding the integration process and operation as a combined company include the following:

- adverse contractual issues with respect to various agreements with third parties (including joint venture agreements, customers, vendors, licensees or other contractual parties), certain financing facilities, pension fund agreements, agreements for the performance of engineering and related work/services, IT agreements, technology, intellectual property rights and licenses, employment agreements, or pension and other post-retirement benefits-related liability issues;
- inability to retain or motivate key employees and recruit employees;
- disruptions caused, for instance, by reorganizations triggered by the Acquisition of Alcatel Lucent, which may result in inefficiency within the new organization through loss of key employees or delays in implementing our intended structural changes, among other issues;
- inability to achieve the targeted organizational changes, efficiencies or synergies in the targeted time or to the extent targeted, for instance due to inability to streamline overlapping products and services, rationalize our organization and overheads, reduce overheads and costs or achieve targeted efficiencies, and the risk of new and additional costs associated with implementing such changes;
- inability to rationalize or streamline our organization or product lines or to retire legacy products and related services as a result of pre-existing customer commitments;
- loss of, or lower volume of, business from key customers, or the inability to renew agreements with existing customers or establish new customer relationships, including limitations linked to customer policies with respect to aggregate vendor share or supplier diversity policies or increased efforts from competitors aiming to capitalize on disruptions, for instance, in our integration processes;
- conditions and burdens imposed by laws, regulators or industry standards on our business or adverse regulatory or industry developments or litigation affecting us, as a result of the Acquisition of Alcatel Lucent or otherwise;

- potential unknown or larger than estimated liabilities of Alcatel Lucent (prior to the acquisition) or other adverse circumstances related to Alcatel Lucent that lead to larger than expected liabilities or have other adverse impacts on us;
- claims, fines, investigations or assessments for conduct that we failed to or were unable to discover or identify in the course of performing our due diligence investigations of Alcatel Lucent prior to the acquisition, including unknown or unasserted liabilities and issues relating to fraud, non-compliance with applicable laws and regulations, improper accounting policies or other improper activities;
- challenges relating to the consolidation of corporate, financial data and reporting, control and administrative functions, including cash management, foreign exchange/hedging operations, internal and other financing, insurance, financial control and reporting, IT, communications, legal and compliance and other administrative functions;
- the coordination of R&D, marketing and other support functions may fail or cause inefficiencies or other administrative burdens caused by operating the combined business;
- we may not be able to successfully maintain the Nokia Bell Labs research and innovation capabilities, or the Acquisition of Alcatel Lucent or the related integration could have an adverse effect on Nokia Bell Labs;
- potential divestitures of certain businesses or operations, as desired, for which there can be no assurance that we would be successful in executing such a transaction on favorable terms or at all; and
- our ability to eliminate the complexity of our corporate structure following the Acquisition of Alcatel Lucent.

Following the Acquisition of Alcatel Lucent, we have implemented a new leadership team and a new operational structure for our business. For more information on our structure, refer to "Business overview". The new organizational and operational structure may not be appropriately suited to meet our business plans, could be more costly than anticipated, and could adversely affect our ability to achieve the business growth opportunities, cost savings benefits, increased profitability, targeted synergies or efficiencies, which could lead to material adverse effects on our business, financial condition and results of operations.

Additionally, the anticipated cost reductions and other benefits expected to arise from the Acquisition of Alcatel Lucent and the integration of Alcatel Lucent into our existing business, as well as related costs to implement such measures, are derived from our estimates, which are inherently uncertain. Our estimates are based on a number of assumptions made in reliance on the information available to us and management's judgments based on such information, including, without limitation, information relating to the business operations, financial condition and results of operations of Alcatel Lucent. While we believe these estimated synergy benefits and related costs are reasonable, the underlying assumptions are inherently uncertain and subject to a variety of significant business, economic, and competitive factors, risks and uncertainties that could cause our actual results to differ materially from those contained in the expected synergy benefits and related cost estimates.

We may be materially and adversely affected by general economic and market conditions and other developments in the economies where we operate.

As we are a company with global operations and sales in many countries around the world, our sales and profitability are dependent on general economic conditions both globally and regionally, the global financial markets, as well as industry and market developments in numerous diverse markets. Adverse developments in, or the general weakness of, economic conditions, such as unemployment or consumer spending, may have an adverse impact on the spending patterns of end-users. This, in turn, may affect both the services they subscribe to and the usage levels of such services, which may lead mobile operators and service providers to invest less in related infrastructure and services or to invest in low-margin products and services, which could have a material adverse effect on our business, financial condition, and results of operations.

General uncertainty and adverse developments in the financial markets and the general economy could have a material adverse effect on our ability to obtain sufficient or affordable financing on satisfying terms. Uncertain market conditions may increase the price of financing or decrease its availability. We could encounter difficulties in raising funds or accessing liquidity, which may have a material adverse effect on our business, financial condition and results of operations.

We face intense competition and may fail to effectively and profitably invest in new competitive high-quality products, services, upgrades and technologies or bring them to market in a timely manner.

Our business and the markets where we operate are characterized by rapidly evolving technologies, frequent new technological requirements, product feature introductions and evolving industry standards. Our business performance depends on the timely and successful introduction of new products, services and upgrades of current products to meet the evolving requirements of customers, comply with emerging industry standards and address competing technological and product developments carried out by competitors. The R&D of new and innovative, technologically advanced products, as well as upgrades to current products and new generations of technologies, is a complex and uncertain process requiring high levels of innovation and investment, in addition to accurate anticipation of technological, regulatory and market trends. We may focus our resources on products and technologies that do not become widely accepted or ultimately prove unviable. Additionally, many of our current and planned products are highly complex and may contain defects or errors that are, for instance, detected only after deployment in telecommunications networks. Our results of operations will depend to a significant extent on our ability to succeed in the following areas:

- maintaining and developing a product portfolio and service capability that are attractive to our customers, for instance by keeping pace with technological advances in our industry and pursuing the technologies that become commercially accepted;
- continuing to introduce new products and product upgrades successfully and on a timely basis;
- developing new or enhancing existing tools for our services offerings;
- optimizing the amount of customer or market specific technology, product and feature variants in our product portfolio;
- continuing to enhance the quality of our products and services as well as introducing products and services that have desired features and attributes, such as energy efficiency;

- pricing products and services appropriately, which is crucial in the networks infrastructure business due to the typical long-term nature and complexity of the agreements; and
- leveraging our technological strengths.

Certain of our competitors have significant resources to invest in market exploration and may seek new monetization models or drive industry development and capture value in areas where we may not currently be competitive or do not have similar resources available to us. These areas may include monetization models linked to large amounts of consumer data, large connected communities, home or other entertainment services, digital media and VR products, healthcare products and services, alternative payment mechanisms or marketing products. We also face competition from various companies that may be able to develop technologies or products that become preferred over those developed by us or result in adverse effects on us through, for instance, developing technological innovations that make our innovations less relevant.

The participants in the information technology, communications and related services market compete on the basis of product offerings, technical capabilities, quality, price and affordability through consumer financing arrangements. Any failure by us to effectively and profitably invest in new competitive products, services, upgrades or technologies and bring them to market in a timely manner could result in a loss of net sales and market share and have a material adverse effect on our results of operations, competitiveness, profitability and financial condition.

The competitive environment in this market continues to be intense and is characterized by maturing industry technologies, equipment price erosion and aggressive price competition. Moreover, mobile operators' cost reductions and network sharing, and industry consolidation among operators have reduced the amount of available business, resulting in further competition and pressure on pricing and profitability. Consolidation of operators may result in vendors and service providers concentrating their business in certain service providers and increasing the possibility that agreements with us are terminated or not renewed. Furthermore, there are various incumbent and new players competing with Nokia in customer groups we strategically target, such as Webscales and customers in energy, transport, public sector

and TXLEs. With these types of customers, the nature of competition can be significantly different from the communication service provider markets, including competition based on access network, core network, Cloud infrastructure, platforms, applications and devices.

We compete with companies that have large overall scale, which affords such companies more flexibility (e.g., on pricing). We also continue to face intense competition globally, including from companies based in China which endeavor to gain further market share and broaden their presence in new areas of the network infrastructure and related services business (e.g., by providing lower-cost products and services). Competition for new customers, as well as for new infrastructure deployment, is particularly intense and focused on the favorability of price and agreement terms. Additionally, new competitors may enter the industry as a result of acquisitions or shifts in technology. For example, the virtualization of core and radio networks and the convergence of IT and telecommunications may lower the barriers to entry for IT companies entering the traditional telecommunications industry or build up tight strategic partnerships with our traditional competitors. These developments may enable more generic IT, software and hardware to be used in telecommunications networks leading to further pricing pressure. Additionally, Facebook launched the Telecom Infra Project in 2016 with the declared objective to drive a faster pace of innovation in telecommunication infrastructure through more collaborative approaches and open technologies across access, backhaul, core and management. Other Webscale players are and may be launching similar initiatives. While Nokia is actively participating in such initiatives, these developments may increase competition and reduce our market share. If we are unable to respond successfully to competitive challenges in the markets in which we operate, our business, financial condition and results of operations may be materially and adversely affected.

We must introduce high-quality products and services in a cost-efficient, timely manner and manage proactively the costs related to our portfolio of products and services, including component sourcing, manufacturing, logistics and other operations. If we fail to maintain or improve our market position, competitiveness or scale, or if we fail to leverage our scale to the fullest extent and keep prices and costs at competitive levels or provide high-quality products and services, this could materially and adversely affect our competitive position, business and results of operations, particularly our profitability.

Risk factors continued

We are dependent on the development of the industries in which we operate, including the information technology and communications industries and related services market, as well as the digital media and digital health markets. The information technology and communications industries and related services market are cyclical and are affected by many factors, including the general economic environment, purchase behavior, deployment, roll-out timing and spending by service providers, consumers and businesses. The digital media and digital health markets are rapidly evolving markets affected by numerous factors, including regulation and IPR.

Our sales and profitability are dependent on the development of the industries in which we operate, including the information technology and communications and related services market in numerous markets around the world. For instance, we are particularly dependent on the investments made by mobile operators and network service providers in network infrastructure and related services. The pace and size of such investments are in turn dependent on the ability of network service providers and mobile operators to increase their subscriber numbers, reduce churn and compete with business models eroding revenue from traditional voice, messaging and data transport services, as well as the financial condition of such network service providers and mobile operators. Additionally, market developments favoring new technological solutions, such as SDN, may reduce spending by our competitors who have, or may have, a stronger position in such technologies. The technological viability of standardized, low-margin hardware products in combination with the 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. Both effects could have a material adverse effect on our business.

We expect to generate a significant share of our growth from new customers, including Webscales and vertical customers in energy, transport, public sector and TXLEs. 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 attain new customers.

The level of demand by service providers and other customers that purchase our products and services can change quickly and can vary over short periods of time. As a result of the uncertainty and variations in the telecommunications and vertical industries, accurately forecasting revenues, results and cash flow remains difficult.

Our success in the industries where we operate is subject to a number of risks and uncertainties, including:

- the intensity of competition;
- further consolidation of our customers or competitors;
- our ability to develop products and services in a timely manner, or at all, that meet future technological or quality requirements and challenges at a competitive cost level;
- our ability to maintain and build up strategic partnerships in our value creation chain (e.g., in product creation and in project delivery);
- our ability to correctly estimate technological developments or adapt successfully to such developments;
- the development of the relevant markets and/or industry standards in directions that leave us deficient in certain technologies and industry areas that impact our overall competitiveness;
- the choice of our customers to turn to alternative vendors to maintain end-to-end services from such vendors;
- our ability to successfully develop market recognition as a leading provider of software and services in the information technology and communications and related services market, in the digital media and digital health markets as well as with our vertical customers in energy, transport, public sector and TXLEs;
- our ability to sustain or grow net sales in our business and areas of strategic focus, which could result in the loss of benefits related to economies of scale and reduced competitiveness;
- our ability to identify opportunities and enter into agreements that are commercially successful;

- our ability to continue utilizing current customer relations to advance our sales of related services, or pursue new service-led growth opportunities;
- our global presence that involves large projects that expose us to various business and operational risks including those related to market developments, political unrest or change in political atmosphere, economic and trade sanctions and compliance and anti-corruption-related risks, especially with respect to emerging markets; and
- our ability to maintain efficient and low-cost operations.

Our inability to overcome any of the above risks or uncertainties could have a material adverse effect on our results of operations or financial performance.

We conduct our business globally, exposing us to political and regional risks, including unfavorable or unpredictable treatment in relation to tax matters, exchange controls, and other restrictions.

We generate sales from, and have manufacturing facilities and suppliers located in, various countries around the world. Regulatory developments, economic developments, political turmoil, military actions, labor unrest, civil unrest, public health and safety (including disease outbreaks), environmental issues (including adverse effects resulting from climate change) and natural and man-made disasters in such countries could have a material adverse effect on our ability to supply products and services, including network infrastructure equipment manufactured in such countries, and on our sales and results of operations. In recent years, we have witnessed political unrest in various markets in which we conduct business or in which we have operations, which in turn has adversely affected our sales, profitability or operations in these markets, and in certain cases affected us outside these countries or regions. Any reoccurrence or escalation of such unrest could have a further material adverse effect on our sales or results of operations. For instance, instability and conflict in regions such as the Middle East, parts of Africa and Ukraine have in the past adversely affected, and may in the future adversely affect, our business or operations in these or related markets (e.g., through increased economic uncertainty or a slowdown or downturn attributable to current or increased economic and trade sanctions).

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 emerging markets may also 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, nationalization, inflation, currency fluctuations or the absence of or unexpected changes in regulation, as well as other unforeseeable operational risks. The purchasing power of our customers 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.

We continuously monitor international developments and assess the appropriateness of our presence and business in various markets. For instance, as a result of international developments, we have expanded our business in Iran in compliance with applicable economic sanctions and other regulations. While the international agreement on Iran's nuclear activities has led to a relaxation of international sanctions, many jurisdictions continue to impose various restrictions on conducting business in Iran and the international regulatory framework remains complex. Adverse political or other developments could potentially lead to a reintroduction of sanctions which might necessitate a reassessment of our position there. Should we decide to exit or otherwise alter our presence in a particular market, this may have an adverse effect on us through, for example, triggering investigations, tax audits by authorities, claims by contracting parties or reputational damage. The results and costs of investigations or claims against our international operations may be difficult to predict and could lead to lengthy disputes, fines or fees, indemnities or costly settlements.

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

We need to manage our operating expenses and other internal costs to maintain cost efficiency and competitive pricing of our products and services. Failure by us to determine the appropriate prioritization of operating expenses and other costs, to identify and implement the appropriate measures to adjust our operating expenses and other costs on a timely basis, or to maintain achieved cost reduction levels, could have a material adverse effect on our business, results of operations and financial condition. For instance, we have announced targeted operating cost savings in relation to the Acquisition of Alcatel Lucent and achieving these operating cost savings is dependent partly on the continued efficient integration of the companies which may include certain uncertainties.

We operate in highly competitive industries and we are continuously targeting increased efficiency of our operations through various initiatives. We may, in the ordinary course of business, institute new plans for restructuring measures. Such restructuring measures may be costly, potentially disruptive to operations, and may not lead to sustainable improvements in our overall competitiveness and profitability and, thus, may have a material adverse effect on our business or results of operations, for instance, as a result of the loss of benefits related to economies of scale.

In addition to our efforts in operating cost savings, both Nokia and Alcatel Lucent have separately prior to the acquisition implemented various efficiency and other programs aimed at improving cost savings and financial performance. We may implement new similar programs going forward and there can be no assurance that such plans will be met as planned or result in sustainable improvements. Factors that may prevent a successful implementation or cause adverse effects on us include the following:

- expectations with respect to market growth, customer demand and other trends in the industry in which we operate;

- our ability to benefit from industry trends may prove to be inaccurate and changes in the general economic conditions, whether globally, nationally or in the markets in which we operate, may impact our ability to implement such plans;
- a down-turn in global or regional economic conditions may have an adverse effect on our ability to achieve the cost savings contemplated;
- unfavorable changes in legislation in the markets in which we operate may influence timing, costs and expected savings of certain initiatives contemplated;
- our ability to successfully develop new or improve existing products, market products to new or existing customers, enter new markets and otherwise grow our business in a highly competitive market;
- organizational changes related to the implementation plans require the alignment and adjustment of resources, systems and tools, which if not completed in a structured manner could impact our ability to achieve our goals, projected cost savings and ability to achieve the efficiencies contemplated;
- the costs to effect the initiatives contemplated by our plans may exceed our estimates and we may not be able to realize the targeted cash inflows or yield other expected proceeds;
- our cost saving initiatives, including R&D, may negatively affect our ability to develop new or improve existing products and compete effectively in certain markets, and there is no guarantee that we will continue to be able to successfully innovate or remain technologically competitive;
- disruptions to regular business operations caused by the plans, including to unaffected parts of Nokia; the benefits of our plans may not be realized in contemplated timeframes or at all;
- 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 expected savings and the feasibility of certain of the initiatives contemplated;
- bargaining power of our suppliers may prevent us from achieving targeted procurement savings;

Risk factors continued

- skilled employees may leave or we may not be able to recruit employees as a result of planned initiatives, and loss of their expertise may cause adverse effects on our business or limit our ability to achieve our goals; and
- overall deterioration of brand value among potential and current employees or as a preferred employer.

While we are implementing and have implemented various cost savings and other initiatives in the past, and may implement such initiatives in the future, there can be no assurance that we will be able to complete those successfully or that we will realize the projected benefits. 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.

If we are unable to realize the projected benefits or contemplated cost savings by efforts aimed at managing and improving financial performance, operational performance, cost savings, competitiveness, targeted results or improvements, we may experience negative impacts on our reputation or a material adverse effect on our business, financial condition, results of operations and cash flows. Efforts to plan and implement cost saving initiatives may divert management attention from the rest of the business and adversely affect our business.

We are dependent on a limited number of customers and large multi-year agreements. The loss of a single customer, 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 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 service providers operating in multiple markets. These developments are also likely to increase the impact on our net sales based on the outcome of certain individual agreement tenders.

Mobile operators are increasingly entering into network 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 mobile operators sell consulting services to enhance the negotiating position of small operators

with their vendors. As a result of these trends and the intense competition in the industry, we may be required to agree to increasingly 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, due to the long-term nature of the agreements, it is possible that the contract terms of the agreement may prove less favorable to us than originally expected, for instance due to changes in costs and product portfolio decisions.

As a result of the Acquisition of Alcatel Lucent, we may lose certain existing agreements, or be unable to renew or gain new agreements due to customer diversity policies that limit the ability of customers to have one network provider exceeding a certain threshold of business in a given market. Policies or practices in certain countries may also limit the possibility for foreign vendors to participate in certain business areas over a certain threshold.

Furthermore, there is a risk that the timing of sales and results of operations associated with large multi-year agreements, which are typical in the mobile infrastructure and related services business, will differ from expectations. Moreover, such agreements often require dedication of substantial amounts of working capital and other resources, which may adversely affect our cash flow, particularly in the early stages of an agreement's term, or may require us to continue to sell certain products and services, or to sell in certain markets, that would otherwise be discontinued or exited, thereby diverting resources from developing more profitable or strategically important products and services, or focusing on more profitable or strategically important markets. Any suspension, termination or non-performance by us under an agreement's terms may have a material adverse effect on us (e.g., due to penalties for breaches or early termination).

Due to our global operations, our net sales, costs and results of operations, as well as the U.S. 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 exchange rate exposure, and we manage our operations to mitigate, but not to eliminate, the impacts of exchange rate fluctuations. There can be no assurance, however, that our hedging

activities will prove successful in mitigating the potentially negative impact of exchange rate fluctuations. Additionally, significant volatility in the relevant exchange rates may increase our hedging costs, as well as limit our ability to hedge our exchange rate exposure. In particular, we may not adequately hedge against unfavorable exchange rate movements, including those of certain emerging market currencies, which could have an adverse effect on our financial condition and results of operations. 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 and competitors. Additionally, exchange rate fluctuations may materially affect the U.S. dollar value of any dividends or other distributions that are paid in euro, as well as the market price of our ADSs.

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 instruments to reduce certain of these risks. If our strategies to reduce such risks are not successful, our financial condition and results of operation may be harmed.

The Nokia Technologies business group's 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.

We have historically invested significantly in R&D to develop new relevant technologies, products and services for our business. This has led to the Nokia Technologies business group possessing one of the industry's strongest intellectual property portfolios, including numerous standardized or proprietary patented technologies. We now have two further, distinct and industry-leading portfolios: the Nokia Networks and Alcatel Lucent portfolios. Many of our products and services use or are protected by patents in these portfolios. We also generate revenue by licensing, and we seek to renew existing license agreements and negotiate new license agreements. We also seek to expand the scope of our licensing activities to other industries, in particular those that implement mobile communication technologies.

The continued strength of our portfolios depends on our ability to create new relevant technologies, products and services through our R&D activities and to protect our IPR. If those technologies, products and services do not become relevant, and therefore attractive to licensees, the strength of our intellectual property portfolios could be reduced, which could adversely affect our ability to use our intellectual property portfolios for revenue generation. Our intellectual property-related revenue can vary considerably from time to time based on factors such as the terms of agreements we enter into with licensees, and there is no assurance that past levels are indicative of future levels of intellectual property-related revenue.

Despite the steps that we have taken to protect our technology investments with IPR, we cannot be certain that any rights or pending applications will be granted or that the rights granted in connection with any future patents or other IPR will be sufficiently broad to protect our innovations. Third parties may infringe our intellectual property relating to our proprietary technologies or disregard their obligation to seek a license under our SEPs or seek to pay less than reasonable license fees. If we are unable to continue to develop or protect our intellectual property-related revenue or establish new sources of revenue, this may materially and adversely affect our business, financial position and results of operations.

The Nokia Technologies business group's sales and profitability are currently largely derived from patent licensing. Patent licensing income may be adversely affected by general economic conditions or adverse market developments, as well as regulatory and other developments with respect to protection awarded to technology innovations or compensation trends with respect to licensing. For example, our patent licensing business may be adversely affected if a licensee's ability to pay is reduced or they become insolvent or bankrupt. Additionally, poor performance of potential or current licensees may limit a licensee's motivation to seek new or renew existing licensing arrangements with us. In certain cases, patent licensing income is dependent on the sales of the licensee, where the reduced sales of the licensee have a direct effect on the patent licensing income received by the Nokia Technologies business group.

We enforce our patents against unlawful infringement and generate revenue through realizing the value of our intellectual property by entering into license agreements and occasionally through business transactions. Patent license agreements can cover both licensees' past and future sales. The portion of the income that relates to licensees' past sales is not expected to have a recurring benefit and ongoing patent income from licensing is generally subject to various factors that we have little or no control over, for instance sales by the licensees.

In certain cases, we have initiated litigation to enforce our patents and seek licensing fees or utilized arbitration proceedings to establish the terms of compensation between the parties. For instance, in December 2016, we initiated litigation against Apple in several jurisdictions for infringement of Nokia patents. Due to the nature of any litigation or arbitration proceedings, there can be no assurances as to the final outcome or timing of any outcome of litigation, arbitration or other resolution.

Regulatory developments, actions by authorities, or applications of regulations may adversely affect our ability to protect our intellectual property or create intellectual property-related revenue. Any patents or other IPR may be challenged, invalidated or circumvented, and any right granted under our patents may not provide competitive advantages for us. Our ability to protect and monetize our intellectual property may depend on regulatory developments in various jurisdictions and the implementation of the regulations by administrative bodies. Our ability to protect, license or divest our patented innovations may vary by region. In the technology sector generally, certain licensees are actively avoiding license payments, while some licensors are using aggressive methods to collect license payments, with both behaviors attracting regulatory attention. Authorities in various countries have increasingly monitored patent monetization and may aim to influence the terms on which patent licensing arrangements or patent divestments may be executed. Such terms may be limited to a certain country or region; however, authorities could potentially seek to widen the scope and even impose global terms, potentially resulting in an adverse effect on us or limiting our ability to monetize our patent portfolios.

Intellectual property-related disputes and litigation are common in the technology industry and are often used to enforce patents and seek licensing fees. Other companies have commenced and may continue to commence actions seeking to establish the invalidity of our intellectual property, including our patents. 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, which could have an impact on our competitive position. 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.

We retained our entire patent portfolio after the Sale of the D&S Business in 2014. Following the Sale of the D&S Business, Nokia Technologies is no longer required to agree cross-licenses to cover its 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 future. In the past, parts of our intellectual property development were driven by innovation from the D&S 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 separately within 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.

Risk factors continued

Our products, services and business models depend on technologies that we have developed as well as technologies that are licensed to us by certain third parties. As a result, evaluating the rights related to the technologies we use or intend to use is increasingly challenging, and we expect to continue to face claims that we have allegedly infringed third parties' IPR. The use of these technologies may also result in increased licensing costs for us, restrictions on our ability to use certain technologies in our products and/or costly and time-consuming litigation.

Our products and services include, and our business models depend on, utilization of numerous patented standardized or proprietary technologies. We invest significantly in R&D through our business to develop new relevant technologies, products and services. Our R&D activities have resulted in us having one of the industry's strongest intellectual property portfolios, on which our products and services and future cash generation and income depend. We believe our innovations that are protected by IPR are a strong competitive advantage for our business. The continued strength of our IPR portfolios depends on our ability to create new relevant technologies, products and services through our R&D activities.

Our products and services include increasingly complex technologies that we have developed or that have been licensed to us by certain third parties. The amount of such proprietary technologies and the number of parties claiming IPR continue to increase, even within individual products, as the range of our products becomes more diversified and as the complexity of the technology increases. We continue to face the possibility of alleged infringement and related intellectual property claims going forward. The holders of patents and other IPR potentially relevant to our existing and future products may be unknown to us, may have different business models, may refuse to grant licenses to their proprietary rights or may otherwise make it difficult for us to acquire a license on commercially acceptable terms. There may also be technologies licensed to and relied on by us that are subject to alleged infringement or other corresponding allegations or claims by others which could impair our ability to rely on such technologies. Additionally, although we endeavor to ensure that companies collaborating with us possess appropriate IPR or licenses, we cannot fully avoid the risks of IPR infringement by suppliers of components, processes and other various layers in our

products, or by companies with which we collaborate. Similarly, we and our customers may face claims of infringement in connection with the use of our products.

In line with standard industry practice, we generally indemnify our customers for certain intellectual property-related infringement claims related to products or services purchased from us. Such claims are generally made directly to our customer and we may have limited possibilities to control the processes or evaluate the outcomes in advance. As such, indemnifications can result in significant payment obligations for us that may be difficult to predict in advance.

The business models for many areas in advanced IT, including mobile services, may not be clearly established. The lack of availability of licenses for copyrighted content, delayed negotiations or restrictive licensing terms may have a material adverse effect on the cost or timing of content-related services offered by us, mobile network operators or third-party service providers.

Since all technology standards that we use, and rely on, including 3G, LTE mobile communication technologies and 5G, include certain IPR, we cannot fully avoid risks of a claim for infringement of such rights due to our reliance on such standards. We believe the number of third parties declaring their intellectual property 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 technology increases, it remains likely that we will need to obtain licenses with respect to existing and new standards from other licensors. While we believe most such IPR declared or 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. As a result, we have experienced costly and time-consuming litigation 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 costly and time-consuming litigation, and any adverse result in any such litigation may lead to restrictions on our ability to sell certain products and could result in payments that could potentially have a material adverse effect on our operating results and financial condition.

These legal proceedings may continue to 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 restrictions on our ability to sell our products, require us to pay increased licensing fees, unfavorable judgments, costly settlements, fines or other penalties and expenses.

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 products. The total direct IPR costs consist of actual payments to licensors, accrued expenses under existing agreements and provisions for potential liabilities. We believe our accruals and provisions are appropriate for all technologies owned by third parties. The ultimate outcome, however, may differ from the provided level, which could have a positive or adverse impact on our results of operations and financial condition.

Any restrictions on our ability to sell our products due to expected or alleged infringements of third-party IPR and any IPR claims, regardless of merit, could result in a material loss of profits, costly litigation, the obligation to pay damages and other compensation, the diversion of the attention of our key employees, product shipment delays or the need for us to develop non-infringing technology or to enter into a licensing agreement on unfavorable commercial terms. If licensing agreements are not available on commercially acceptable terms, we could be precluded from making and selling the affected products, or could face increased licensing costs. As new features are added to our products, we may need to acquire further licenses, including from new and sometimes unidentified owners of intellectual property. The cumulative costs of obtaining any necessary licenses are difficult to predict and may over time have a material adverse effect on our operating results.

Our business is subject to direct and indirect regulation. As a result, changes in various types of regulations or their application, as well as economic and trade policies applicable to current or new technologies or products, may adversely affect our business and results of operations. Our governance, internal controls and compliance processes could also fail to prevent regulatory penalties, both at operating subsidiaries and in joint ventures.

Our business is subject to direct and indirect regulation in each of the countries and regions where we, the companies with which we collaborate and our customers operate. We develop many of our products based on existing regulations and technical standards, our interpretation of unfinished technical standards or, in certain cases, in the absence of applicable regulations and standards. As a result, changes in various types of regulations or their application, as well as economic and trade policies applicable to current or new technologies or products, may adversely affect our business and results of operations. For example, changes in regulation affecting the construction of base stations and other network infrastructure could adversely affect the timing and costs of new network constructions or the expansion and commercial launch and ultimate commercial success of such networks. Also, changes in applicable privacy-related regulatory frameworks or their application may adversely affect our business, including possible changes that increase costs, limit or restrict possibilities to offer products or services, or reduce or could be seen to reduce the privacy aspects of our offerings, including if further governmental interception capabilities or regulations aimed at allowing governmental access to data are required for the products and services that we offer. An increase in the protectionist stances of governments around the world, which impact the free flow of data across borders, is already affecting our global service delivery model and, due to the increase in terrorism (including cyber terrorism), we expect that the adoption of data localization, national sourcing and national hiring regulations and policies will increase. An increase in regulation of digital telecommunications, especially in the European Union, might impose additional costs or burdens on our customers and on Nokia itself. 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. Restrictive government policies, such as

limitations on visas, may make it difficult for us to move our employees into and out of these jurisdictions. Changes in political regimes will also likely impact the way Nokia does business, due to potential changes in trade, cybersecurity, telecommunications, immigration and environmental policies.

Moreover, countries could require governmental interception capabilities or regulations aimed at allowing governmental access to data that could adversely affect us by reducing our sales to such markets or limiting our ability to use components or software that we have developed or sourced from other companies. Furthermore, our business and results of operations may be adversely affected by regulation, as well as economic and trade policies favoring the local industry participants, as well as other measures with potentially protectionist objectives that host governments in various countries may take, particularly in response to challenging global economic conditions or following changes in political regimes. The impact of changes in or uncertainties related to regulation and trade policies could affect our business and results of operations adversely or indirectly in certain cases where the specific regulations do not directly apply to us or our products and services.

The regulatory, exports and sanctions legal environment can also be difficult to navigate for companies with global operations. Our ability to protect our intellectual property and generate intellectual property-related net sales is dependent on regulatory developments in various jurisdictions, as well as the application of the regulations, for instance through administrative bodies. Export control, tariffs or other fees or levies imposed on our products and environmental, health, product safety and data protection, 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. Additionally, changes in various types of regulations or their application with respect to taxation or other fees collected by governments or governmental agencies may result in unexpected payment obligations, and in response to prevailing difficult global economic conditions there may be an increased aggressiveness in collecting such fees. We may be subject to new, existing or tightened export control regulations, sanctions, embargoes or other forms of economic and trade restrictions imposed on certain countries. Such actions may trigger additional investigations, including tax audits

by authorities or claims by contracting parties. The results and costs of such investigations or claims may be difficult to predict and could lead to lengthy disputes, fines or fees, indemnities or a costly settlement.

Our provision of services and adaptation of Cloud-based solutions has resulted in us being exposed to a variety of new regulatory issues or different exposure to regulatory issues (e.g., related to data privacy) and makes us subject to increased regulatory scrutiny. Our current business models rely on certain centralized data processing solutions and Cloud or remote delivery-based services for distribution of services and software or data storage. Cloud and remote delivery-based business models and operations have certain inherent risks, including those stemming from potential security breaches, and applicable regulatory regimes may cause limitations in implementing such business models or expose us to adverse effects stemming for instance from regulatory or contractual issues, including penalties, fines, sanctions and limitations on conducting business. Moreover, our competitors have employed and will likely continue to employ significant resources to shape the legal and regulatory regimes in countries where we have significant operations. Governments and regulators may make legal and regulatory changes or interpret and apply existing laws in ways that make our products and services less appealing to end users or require us to incur substantial costs, change our business practices or prevent us from offering our products and services.

We operate on a global scale and our business and activities cover multiple jurisdictions and are subject to complex regulatory frameworks. Current international trends show increased enforcement activity and enforcement initiatives in areas such as competition law, privacy, cybersecurity and anti-corruption. Despite our Group-wide annual ethical business training and other measures, we may not be able to prevent breaches of law or governance standards within our business, subsidiaries and joint ventures.

Nokia is a publicly listed company and, as such, subject to various securities and accounting rules and regulations. Improper accounting practices, accounting errors or misjudgment by management could have a material adverse effect on us. Accordingly, Nokia must continue to monitor and assess its internal control over financial reporting and its compliance with the applicable rules and regulations. We have identified two material

Risk factors continued

weaknesses in our internal controls over financial reporting. Refer to “—We have identified material weaknesses in our internal control over financial reporting following the Acquisition of Alcatel Lucent which, if not remediated, could have a material adverse effect on us” for more information on the identified material weakness.

We have identified material weaknesses in our internal control over financial reporting following the Acquisition of Alcatel Lucent which, if not remediated, could have a material adverse effect on us.

Our integration activities in connection with the Acquisition of Alcatel Lucent are ongoing. In connection with the preparation of our consolidated financial statements for the year ended December 31, 2016, our management identified two material weaknesses in the effectiveness of our internal control over financial reporting related to (1) the accounting for income taxes at a former Alcatel Lucent entity in the United States and (2) the accounting and control functions at a former Alcatel Lucent subsidiary in China.

As permitted by applicable regulations and accounting rules, Nokia's internal controls effectiveness assessment in 2016 did not include Alcatel Lucent's legacy operations. Our operating subsidiaries or our joint ventures' failure, or a failure to integrate the Alcatel Lucent legacy operations into our internal controls framework, could adversely affect the accuracy and timeliness of our financial reporting, which could result, for instance, in loss of confidence in us or in the accuracy and completeness of our financial reports, or otherwise in the imposition of fines or other regulatory measures, which could have a material adverse effect on us. Moreover, we may identify further control deficiencies that are material weaknesses in the future.

A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of our annual or interim consolidated financial statements will not be prevented or detected on a timely basis. We may be unable to establish and implement a plan to remediate these material weaknesses within the anticipated timeframe. If we are unable to remediate the material weaknesses described above, or any other subsequently identified material weaknesses, our ability to record, process and report financial information accurately could be adversely affected. The occurrence of or failure to remediate the material weaknesses, or any other subsequently identified material weaknesses, could have a material adverse effect on our financial position or business.

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 to applicable regulatory regimes, cybersecurity breaches and other unauthorized access to network data or other potential security risks that may adversely affect our business.

We are exposed to information security-related risk, for instance as our business and operations rely on confidentiality of proprietary information as well as sensitive information, for instance related to our employees. Also, our business models rely on certain centralized data processing solutions and Cloud or remote delivery-based services for distribution of services and software or data storage. The Cloud or remote delivery-based business models and operations have certain inherent risks, including those stemming from potential security breaches and applicable regulatory regimes, which may cause limitations in implementing Cloud or remote delivery-based models or expose us to regulatory or contractual sanctions.

Although we endeavor to develop products and services that meet the appropriate security standards, including effective data protection, we or our products and online services, marketing and developer sites may be subject to cybersecurity breaches, including hacking, viruses, worms and other malicious software, unauthorized modifications, or illegal activities that may cause potential security risks and other harm to us, our customers or consumers and other end-users of our products and services. IT is rapidly evolving, the techniques used to obtain unauthorized access or sabotage systems change frequently and the parties behind cyber-attacks and other industrial espionage are believed to be sophisticated and have extensive resources, and it is not commercially or technically feasible to mitigate all known vulnerabilities in a timely manner or to eliminate all risk of cyber-attacks and data breaches. Additionally, we contract with multiple third parties in various jurisdictions who collect and use certain data on our behalf. Although we have processes in place designed to ensure appropriate collection, handling and use of such data, third parties may use the data inappropriately or breach laws and agreements in collecting, handling or using or leaking such data. This could lead to lengthy legal proceedings or fines imposed on us, as well as adverse effects to our reputation and brand value.

In connection with providing products and services to our customers and consumers, certain customer feedback, information on consumer usage patterns and other personal and consumer data are collected, stored and processed through us, either by us or by our business partners or subcontractors. Loss, improper disclosure or leakage of any personal or consumer data collected by us or which is available to our partners or subcontractors, made available to us or stored in or through our products, could have a material adverse effect on us and harm our reputation and brand. We have outsourced a significant portion of our IT operations, as well as the network and information systems that we sell to third parties or for whose security and reliability we may otherwise be accountable. Additionally, governmental authorities may use our networks products to access the personal data of individuals without our involvement; for example, through the so-called lawful intercept capabilities of network infrastructure. Even the perception that our products do not adequately protect personal or consumer data collected by us, made available to us or stored in or through our products or that they are being used by third parties to access personal or consumer data could impair our sales, results of operations, reputation and brand value.

Additionally, cyber-attacks can be difficult to prevent, detect or contain. We cannot rule out the possibility that there may have been cyber-attacks that have been successful and/or evaded our detection. We continue to invest in risk mitigating actions; however, there can be no assurance that such investments and actions will prevent or detect future cyber-attacks.

Our business is also vulnerable to theft, fraud or other forms of deception, sabotage and intentional acts of vandalism by third parties and employees. Unauthorized access to or modification, misappropriation or loss of our intellectual property and confidential information could result in litigation and potential liability to customers, suppliers and other third parties, harm our competitive position, reduce the value of our investment in R&D and other strategic initiatives or damage our brand and reputation, which could have a material adverse effect on our business, results of operations or financial condition. 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 cause business disruptions and be more expensive, time consuming and resource-intensive. Such disruptions could adversely impact our business.

As our business operations, including those we have outsourced, rely on complex IT systems and networks (and related services), our reliance on the precautions taken by external companies to ensure the reliability of our and their IT systems, networks and related services is increasing. Consequently, certain disruptions in IT systems and networks affecting our external providers could have a material adverse effect on our business.

Inefficiencies, breaches, malfunctions or disruptions of information technology systems and processes could have a material adverse effect on our business and results of operations.

Our 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. Additionally, certain personal, consumer and customer data is stored and processed on our IT service provider's equipment as part of our business operations. All IT systems, networks and processes are potentially vulnerable to damage, breaches, malfunction or interruption from a variety of sources. We are, to a significant extent, relying on third parties for the provision of IT services. 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. The ongoing trend to Cloud-based architectures and network function virtualization has introduced further complexity and associated risk.

We are constantly seeking to improve the quality and security of our IT systems. For instance, we have introduced new significant IT solutions in recent years and outsourced certain functions, increasing our dependence on the reliability of external providers as well as the security of communication with them. 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 or remote delivery on demand-based services 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, a cybersecurity breach, malfunctions or other disruptions resulting from IT systems and processes. Our integration of Alcatel Lucent and the resulting homogenization of our IT landscapes and processes may also result in potential security, business continuity and efficiency risks.

We pursue various measures in order to manage our risks related to system and network malfunctions and disruptions, including the use of multiple suppliers and their strong technical and contractual engagements in IT security. However, despite precautions taken by us, 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 breach of our cybersecurity, such as an attack, malware 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. Additionally, if we fail to successfully secure our IT, this may have a material adverse effect on our business and results of operations. A disruption of services relying on our IT, for instance, could cause significant discontent among users resulting in claims, contractual penalties or deterioration of our brand value.

Our products are also highly complex and defects in their design, manufacture and associated hardware, software and content have occurred in the past and may continue to occur in the future. Defects and other quality issues may result from, among other things, failure in our own product manufacturing and service creation and delivery, as well as failure of our suppliers to comply with our requirements, or failures in products and services created jointly with business partners or other third parties where the development and manufacturing process is not fully within our control. Quality issues may cause, for instance, delays in deliveries, loss of intellectual property, liabilities for network outages, court fees and fines due to breaches of significantly increasing regulatory privacy requirements and related negative publicity, and additional repair, product replacement or warranty costs to us, and harm our reputation and our ability to sustain or obtain business with our current and potential customers. With respect to our services, quality issues may relate to the challenges of having the services fully operational at the time they are made available to our customers and maintaining them on an ongoing basis.

We make provisions to cover our estimated warranty costs for our products. We believe our provisions are appropriate, although the ultimate outcome may differ from the provisions that are provided for, which could have a material adverse effect on our results of operations, particularly profitability and financial condition.

Our Nokia Technologies business group aims to generate net sales and profitability through licensing of the Nokia brand and technologies, the development and sales of products and services, especially in the areas of digital media and digital health, as well as other business ventures including technology innovation and incubation, which may not materialize as planned or at all.

Our Nokia Technologies business group pursues various business opportunities building on our innovations and the Nokia brand. In addition to patent licensing, the Nokia Technologies business group is focused on generating net sales and profits through business ventures related to Nokia brand licensing, digital media and digital health, as well as other business ventures including technology innovation and incubation, focused on developing new ideas and prototypes.

In 2016, Nokia Technologies continued to implement its strategy, for instance in the digital health area, through the acquisition of Withings to combine the expertise from Withings with that of Nokia Technologies. Refer to "Overview—Strategy" and "Business Overview—Our businesses—Nokia Technologies" for more information. However, there can be no assurance that we will receive the intended benefits from the Withings acquisition; for instance, we may not be able to maintain or increase the sales of the business acquired through the Withings acquisition. Competition in the consumer health market is intensifying, and Nokia Technologies needs to continue innovating, building differentiating technologies, and creating competitive health products that respond to consumer needs and deliver on brand promise. There can be no assurances that we are able to reach our targets with respect to growing the business, including being able to successfully make the right strategic bets and investments, including choices for the growth segments, product categories, product portfolio, target consumer segments, sales and marketing expansion, scaling up the supply chain and manufacturing, and strategic partnerships.

Risk factors continued

Nokia Technologies also announced in 2016 a strategic agreement covering branding rights and intellectual property licensing with HMD Global. Refer to "Overview—Strategy" and "Business Overview—Our businesses—Nokia Technologies" for more information. Under the agreement, Nokia will receive royalty payments from HMD Global for sales of Nokia branded mobile phones and tablets, covering both brand and intellectual property rights. As such, the amount of income for Nokia is dependent on the business and success of HMD Global. There can be no assurance that we will successfully reach additional new brand licensing arrangements at all or on terms that prove satisfactory to us. The agreement with HMD Global limits Nokia's possibilities to license the Nokia brand for certain types of devices over an agreed time and as such limiting Nokia's licensing possibilities with respect to such devices.

Additionally, licensing the Nokia brand to HMD Global or licensing the Nokia brand to other manufacturers could—in cases where the licensee acts inconsistently with our ethical, compliance or quality standards—negatively affect our reputation and the value of our brand, thus diminishing the business potential with respect to utilizing our brand for licensing opportunities or otherwise having a negative effect on our business. Nokia is not an investor or shareholder of HMD Global and Nokia has limitations in its ability to influence HMD Global in its business and other operations, exposing Nokia to potential adverse effects from the use of the Nokia brand by HMD Global or other adverse developments encountered by HMD Global that become attributable to Nokia through association and HMD Global being a licensee of the Nokia brand.

The Nokia Technologies business group develops and licenses various innovations as well as developing its own products and services, including the OZO VR camera and Digital Health-related products. The manufacturing and selling of devices and services can expose us to risks, including product liability claims, claims from contract manufacturers and negative consumer feedback. The Digital Health device portfolio encompasses connected health devices, such as scales, watches, trackers, blood pressure monitors and thermometers, as well as sleep and home products. Even though the quality control and customer service of the devices follow industry best practices and the devices are certified per the markets they are sold, there is a possibility of actual or claimed

device or software malfunctions resulting, for instance, in recalls, negative consumer feedback, leakage of consumer data and brand deterioration, as well as litigation or claims for compensation.

The industries in which we operate, or may operate in the future, are generally fast-paced, rapidly evolving and innovative. Such industries are at different levels of maturity, and there can be no assurances that any investment we make will yield an expected return or result in the intended benefits. Our business will likely require significant well-placed investments to innovate and grow successfully. Such investments may include R&D, licensing arrangements, acquiring businesses and technologies, recruiting specialized expertise and partnering with third parties. Such investments may not, however, result in technologies, products or services that achieve or retain broad or timely market acceptance or are preferred by our customers and consumers. Additionally, we are entering into new business areas based on our technology assets and may explore new business ventures. Such business areas or plans may be adversely affected by adverse industry and market developments in the numerous diverse markets in which we operate, as well as by general economic conditions globally and regionally. As such, the investments may not be profitable or achieve the targeted rates of return. There can be no assurances that we will be able to identify and understand the key market trends and user segments enabling us to address customers' and consumers' expanding needs in order to bring new innovative and competitive products and services to market in a timely manner.

There can be no assurances that our Nokia Technologies business group will be successful in innovation and incubation or in generating net sales and profits through its business plans, for instance in technology and brand licensing, or products in the areas of digital media and digital health. Additionally, entering into new business areas may expose us to additional liabilities or claims, for instance through product liability or other regulatory frameworks and related government investigations, litigation, penalties or fines.

We are subject to various legislative frameworks and jurisdictions that regulate fraud, as well as economic sanctions and trade policies and, as such, the extent and outcome of possible proceedings concerning such issues are difficult to estimate with any certainty and we may be subject to material fines, penalties and other sanctions as a result of such investigations.

As a global company, we are subject to various legislative frameworks and jurisdictions that regulate fraud committed in the course of business operations, as well as economic sanctions and, as such, the extent and outcome of possible proceedings are difficult to estimate with any certainty. Anti-corruption laws in effect in many countries prohibit companies and their intermediaries from making improper payments to public officials for the purpose of obtaining new business or maintaining existing business relationships. 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 clients are government-owned entities and that our projects and agreements often require approvals from public officials, there is a risk that our employees, consultants or agents may take actions that are in violation of our policies and of anti-corruption laws. In many parts of the world where we currently operate or seek to expand our business, local practices and customs may be in contradiction to 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 and embargoes. Our employees, or other parties acting on our behalf, could violate policies and procedures intended to promote compliance with anti-corruption laws or economic sanctions. 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 at certain levels within our organization, could result in us or our employees becoming subject to criminal or civil enforcement actions, including fines or penalties, disgorgement of profits and suspension or disqualification of sales. Additionally, violations of law or allegations of violations may result in reputational harm and loss of business and adversely affect our brand and reputation. Detecting, investigating

and resolving such situations may also result in significant costs, including the need to engage external advisers, and consume significant time, attention and resources from our management and other key employees. The results and costs of such investigations or claims may be difficult to predict and could lead to, for instance, lengthy disputes, fines, fees or indemnities, costly settlement or the deterioration of the Nokia brand.

As Nokia acquired Alcatel Lucent, any issues with its operations may be attributed to Nokia. In the past, Alcatel Lucent has experienced both actual and alleged violations of anti-corruption laws. As a result of FCPA violations in the past, Alcatel Lucent had to pay substantial amounts to the United States Securities and Exchange Commission in disgorgement of profits and interest, and to the United States Department of Justice in criminal fines. Additionally, Alcatel Lucent had to make certain payments to the Costa Rican Attorney General and the *Instituto Costarricense de Electricidad* to settle anti-corruption claims in Costa Rica. With respect to the French authorities' investigation into corruption activities by Alcatel Lucent and certain of its subsidiaries in Costa Rica (dating back to 2004 and that gave rise to criminal procedures and settlements in Costa Rica and the United States, and which were made public in prior Alcatel Lucent disclosures), the French investigating magistrate on May 24, 2016 ordered that Alcatel Lucent be indicted for violation of the French Criminal Code. The indictment alleges that payments were made on behalf of Alcatel Lucent to Costa Rican officials and executives in order to obtain fixed and mobile telecommunications contracts. If ultimately Alcatel Lucent was found guilty, the maximum penalty to be incurred is expected to be EUR 750 000 and the exclusion of this non-commercial legal entity from bidding for French public procurement contracts.

We may also be subject to claims, fines, investigations or assessments for conduct that we failed to or were unable to discover or identify in the course of performing our due diligence investigations of Alcatel Lucent prior to the acquisition, including unknown or unasserted liabilities and issues relating to fraud, non-compliance with applicable laws and regulations, improper accounting policies or other improper activities. For example, after the Acquisition of Alcatel Lucent, we identified improper conduct and related material weakness in the control environment at an Alcatel Lucent subsidiary in China; if we fail to remediate the material weakness in the accounting and control functions at this subsidiary, the conduct may have an adverse impact on our business, results of operations and financial condition.

Alcatel Lucent is also subject to certain other ongoing investigations and proceedings in France and other countries, which may result in further material damages, fines, penalties and other sanctions, and in its inability to participate in certain public procurement agreements in those countries.

There can be no assurance that we would not be subject to material fines, penalties and other sanctions as a result of similar events outlined in this risk factor. Any damages, fines, penalties or other sanctions attributable to us could have a material adverse effect on our brand, reputation or financial position.

We may be adversely affected by developments with respect to the customer financing or extended payment terms that we provide our customers.

Mobile operators in certain markets may require their suppliers, including us, to arrange, facilitate or provide financing in order to obtain sales or business. They may also require extended payment terms. In certain cases, the amounts and duration of these financings and trade credits, and the associated impact on our working capital, may be significant. Requests for customer financing and extended payment terms are typical for our industry.

Uncertainty in the financial markets may result in increased customer financing requests.

As a strategic marketing requirement, we arrange and facilitate financing or provide extended payment terms to a number of our customers, typically supported by export credit or guarantee agencies or through the sale of related receivables. In the event that export credit agencies face future constraints on their ability or willingness to provide financing to our customers, or there is insufficient demand to purchase their receivables, such events could have a material adverse effect on our business and financial condition. 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 continue to result in a material aggregate amount of trade credits. Even when the associated risk is mitigated by a diversified customer portfolio, defaults in the aggregate could have a material adverse effect on us.

We cannot guarantee that we will be successful in arranging, facilitating or providing required financing, including extended payment terms to our customers, particularly in difficult financial conditions on the market. Additionally, certain of our

competitors may have greater access to credit financing, which could adversely affect our ability to compete successfully for business opportunities in the markets in which we operate. Our ability to manage our total customer financing and trade credit exposure depends on a number of factors, including capital structure, market conditions affecting our customers, the levels and terms of credit available to us and to our customers, the cooperation of export credit or guarantee 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. 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, and 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 liquidity constraints.

We have sold certain receivables to banks or other financial institutions to mitigate the payment risk and improve our liquidity, 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.

We may not be able to collect outstanding guarantees and bonds that could limit our possibilities to issue new guarantees and/or bonds, which are required in customer agreements or practices. We also face risks that such commercial guarantees and bonds may be unfairly called.

We have operations in a number of countries and, consequently, risk facing complex tax issues and disputes and could be obligated to pay additional taxes in various jurisdictions.

We operate in a number of jurisdictions, which involve different tax regimes and application of rules related to taxation. Applicable taxes such as income taxes, as well as indirect taxes and social taxes, for which we make provisions, could increase significantly as a result of changes in applicable tax laws in the countries in which we operate, the interpretation of such laws by local tax authorities could drastically change or tax audits may be performed by local tax authorities. The impact of these factors is dependent on the types of revenue and mix of profit we generate in various countries, for instance, income from sales of products or services may have different tax treatments.

Risk factors continued

While we have made provisions for certain tax issues, the provisions we have made may not be adequate to cover such increases.

We are subject to income taxes in multiple jurisdictions. Our business and the investments we make globally, especially in emerging markets, are subject to uncertainties, including unfavorable or unpredictable changes in tax laws (possibly with retroactive effect in certain cases), taxation treatment and regulatory proceedings, including tax audits. For instance, during early 2013 we were subject to a tax investigation in India, focusing on Indian tax consequences of payments made within Nokia for the supply of operating software from our parent company in Finland. Such proceedings can be lengthy, involve actions that can hinder local operations and affect unrelated parts of our business, and the outcome of such proceedings is difficult to predict.

Our Acquisition of Alcatel Lucent may still result in adverse tax consequences arising from a change of ownership of Alcatel Lucent, including, but not limited to, stamp duties, land transfer taxes, franchise taxes and other levies. Additionally, there may be other potential tax consequences related to the Acquisition of Alcatel Lucent of which we are not currently aware, which may result in significant tax consequences now or in the future.

Adverse developments or outcomes of such proceedings could have a material adverse effect on our cash flow and financial position. We are required to indemnify Microsoft for certain tax liabilities, including (i) tax liabilities for the Nokia entities acquired by Microsoft in connection with the closing of the Sale of the D&S Business, (ii) the assets acquired by Microsoft attributable to tax periods ending on or prior to the closing date of the closing of the Sale of the D&S Business, (iii) a certain pre-closing portion of any taxable period that includes the closing date of the Sale of the D&S Business and (iv) taxes imposed with respect to any asset not acquired by Microsoft in connection with the Sale of the D&S Business. We are also required to indemnify the Consortium for certain tax liabilities, including tax liabilities for the HERE entities acquired by the Consortium in connection with the closing of the Sale of the HERE Business attributable to (i) tax periods ending on or prior to the closing date of the closing of the Sale of the HERE Business, and (ii) a certain pre-closing portion of any taxable period that includes the closing date of the Sale of the HERE Business.

There may also be unforeseen tax expenses that may turn out to have an unfavorable impact on us. As a result, and given the inherent unpredictable nature of taxation, there can be no assurance that our tax rate will remain at the current level or that cash flows regarding taxes will be stable.

Our actual or anticipated performance, among other factors, could reduce our ability to utilize our deferred tax assets.

Deferred tax assets recognized on tax losses, unused tax credits and tax deductible temporary differences are dependent on our ability to offset such items against future 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. There can be no assurances that an unexpected reduction in deferred tax assets will not occur. Any such reduction could have a material adverse effect on us. Additionally, our earnings have in the past been and may in the future continue to be unfavorably affected in the event that no tax benefits are recognized for certain deferred tax items.

It is also possible that the Acquisition of Alcatel Lucent will result in adverse tax consequences following the change of ownership of Alcatel Lucent. The tax consequences of a change of ownership of a corporation can lead to an inability to carry-over certain tax attributes, including, but not limited to, tax losses, tax credits and tax basis of assets.

We may be unable to retain, motivate, develop and recruit appropriately skilled employees.

Our success is dependent on our ability to retain, motivate, develop (through periodic competence training) and recruit appropriately skilled employees. The market for skilled employees and leaders in our business is extremely competitive.

We aim to create a corporate culture that is motivational, based on equal opportunities and encourages creativity and continuous learning, as competition for skilled employees remains intense. Our workforce has fluctuated significantly over recent years as we have introduced changes in our strategy to respond to our business targets and endeavors. Such changes and uncertainty have caused and may in the future cause disruption and dissatisfaction among employees, as well as

fatigue due to the cumulative effect of several reorganizations over the past years and our efforts to implement the new operational structure of our business following the Acquisition of Alcatel Lucent. As a result, 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. Reorganizations and strategic changes may also result in key employees leaving us or resource gaps, certain of which may only be noticed after a certain period of time or which negatively impact the relationship with customers, vendors or other business partners. If the strategic direction or our business is perceived adversely by our employees, this may result in a heightened risk of being unable to retain or recruit employees. Moreover, our employees may be targeted aggressively by our competitors, particularly due to changes in our strategy or to the Acquisition of Alcatel Lucent, and certain employees may be more receptive to such offers, resulting in the loss of key individuals. Accordingly, we may need to adjust our compensation and benefit policies and take other measures to attract, retain and motivate skilled employees to align with the changes to our culture and business in order to implement our new strategies successfully.

Implementing new organizational structures may entail plans to relocate or lay off employees, close or consolidate sites or outsource parts of the business operations. Such strategy-related changes may result in implementation costs, as well as displacement or insecurity among employees resulting in the inability to retain required skills and key employees, resulting in resource gaps and which could have a material adverse effect on our operations. Also, planned efforts to rebalance our workforce may not be completed as planned and may result in larger than expected costs, or we may not be able to complete such efforts as planned, for instance, due to legal restrictions, resulting in a non-optimal workforce that could hinder our ability to reach targeted cost savings. Succession planning, especially with respect to key employees and leaders, is crucial to avoid business disruptions and to ensure the appropriate transfer of knowledge. We have, and may from time to time, acquire businesses or complete other transactions where retaining key employees may be crucial to obtain the intended benefits of such transactions. We must ensure that key

employees of such acquired businesses are retained and appropriately motivated. However, there can be no assurances that we will be able to implement measures successfully to retain or hire the required employees. We believe this will require significant time, attention and resources from our senior management and other key employees within our organization and may result in increased costs. We have encountered, and may in the future encounter, shortages of appropriately skilled employees or lose key employees or senior management, which may hamper our ability to implement our strategies and may have a material adverse effect on our business and results of operations.

Relationships with employee representatives are generally managed at the site level in accordance with country-specific legislation and most collective bargaining agreements have been in place for several years. Our inability to negotiate successfully with employee representatives or failures in our relationships with such representatives could result in strikes by the employees, increased operating costs as a result of higher wages or benefits paid to employees as the result of such strike or other industrial action or inability to implement changes to our organization and operational structure in the planned timeframe or expense level, or at all. If our employees were to engage in a strike or other work stoppage, we could experience a significant disruption in our day-to-day operations and higher ongoing labor costs, which could have a material adverse effect on our business and results of operations.

We may face problems or disruptions in our manufacturing, service creation, delivery, logistics or supply chain. Additionally, adverse events may have a profound impact on production sites or the production sites of our suppliers, which are geographically concentrated.

Our product manufacturing, service creation and delivery, as well as our logistics, or the components of such activities that we have outsourced to third parties, expose us to various risks and potential liabilities, including those related to compliance with laws and regulations and exposure to environmental liabilities or other claims. Additionally, if we are subjected to negative publicity with respect to the activities that we manage or that are managed by third parties, we may experience an adverse impact to our reputation that can have a negative effect, for instance, on our brand and sales. These operations are continuously modified

in an effort to improve the efficiency and flexibility of our manufacturing, service creation and delivery, as well as our logistics function and ability to produce, create and distribute continuously changing volumes. We, or third parties that we outsource services to, may experience difficulties in adapting our supply to meet the changing demand for our products and services, ramping up and down production at our facilities, adjusting our 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 solutions for new products, managing the increasingly complex manufacturing process, service creation and delivery process or achieving required efficiencies and flexibility.

Our manufacturing operations depend on obtaining sufficient quantities of fully functional products, components, sub-assemblies, software and services on a timely basis. Our principal supply requirements for our products are for electronic components, mechanical components and software, which all have a wide range of applications in our products.

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. Our product manufacturing, service creation and delivery, as well as our logistics, or the components of such activities that we have outsourced to third parties may also be adversely affected by various developments, including adverse changes in trade policies or laws or regulations, geopolitical disturbances, pandemic outbreaks or other similar events. Additionally, our dependence on third-party suppliers has increased as a result of our strategic decisions to outsource certain activities. Suppliers 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. For example, our efforts to meet our customer needs during major network roll-outs in certain markets may require sourcing large volumes of components and services from suppliers and vendors at short notice and simultaneously with our competitors. If we fail to properly anticipate customer demand,

an over-supply or under-supply of components and production or services delivery capacity could occur. In many cases, some of our competitors utilize the same contract manufacturers, component suppliers and service vendors. If they have purchased capacity or components ahead of us, this could prevent us from acquiring the required components or services, which could limit our ability to supply our customers or increase our costs.

We may not be able to secure components on attractive terms from our suppliers or a supplier may fail to meet our supplier requirements, such as our and our customers' product quality, safety, security and other standards. Consequently, some of our products may be unacceptable to us following failure to meet our quality controls or unacceptable to our customers. We may also be subject to damages due to product liability claims arising from defective products and components or services that may need to be replaced. Also, certain suppliers may not comply with local laws, including, among others, local labor laws. Additionally, a component supplier may experience delays or disruptions to our manufacturing processes or financial difficulties or even insolvency, bankruptcy or closure of our business, in particular due to difficult economic conditions. We may experience challenges caused by third parties, or other external difficulties in connection with our efforts to modify our operations to improve the efficiency and flexibility of our manufacturing, service creation and delivery, as well as our logistics, including, but not limited to, strikes, purchasing boycotts, public harm to our brand and claims for compensation resulting from our decisions on where to place and how to utilize our manufacturing facilities. Such difficulties may result from, among other things, delays in adjusting production at our facilities, delays in expanding production capacity, failures in our manufacturing, service creation and delivery, as well as logistics processes, failures in the activities we have outsourced, and interruptions in the data communication systems that run our operations. Any of these events could delay our successful and timely delivery of products that meet our and our customers' quality, safety, security and other requirements, cause delivery of insufficient or excess volumes compared to our own estimates or customer requirements, or otherwise have a material adverse effect on our sales and results of operations or our reputation and brand value.

Risk factors continued

Many of our production sites or the production sites of our suppliers are geographically concentrated, with a majority of our suppliers based in Asia. Also we rely on efficient logistic chain elements, e.g. regional distribution hubs or transport chain elements (main ports, streets, and airways), which may be affected by various events, including natural disasters, civil unrest, political instability or public health-related issues. In the event that any of these geographic areas are affected by any adverse conditions, such as natural disasters, geopolitical disruptions, civil unrest or health crises that disrupt production or deliveries from our suppliers, our ability to deliver our products on a timely basis could be adversely affected, which may have a material adverse effect on our business and results of operations.

An unfavorable outcome of litigation, arbitrations, agreement-related disputes or product liability-related allegations against our business could have a material adverse effect on us.

We are a party to lawsuits, arbitrations, agreement-related disputes and product liability-related allegations in the normal course of our business. Litigation, arbitration or agreement-related disputes can be expensive, lengthy and disruptive to normal business operations and divert the efforts of our management. Moreover, the outcomes of complex legal proceedings or agreement-related disputes are difficult to predict. An unfavorable resolution of a particular lawsuit, arbitration or agreement-related dispute could have a material adverse effect on our business, results of operations, financial condition and reputation. We face additional exposure to lawsuits, arbitrations and agreement-related disputes following the Acquisition of Alcatel Lucent as a result of the increased scope of our business and operations. The Acquisition of Alcatel Lucent, as well as any other transactions, could entail related adverse effects or result in organizational and other changes following the transactions, which could have a material adverse effect on our business and operations.

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 our financial condition and results of operations as well as expose us to disputes or litigation.

We record provisions for pending claims when we determine that an unfavorable outcome is likely and the loss can reasonably be estimated. Due to the inherent uncertain nature of legal proceedings, the ultimate outcome or actual cost of settlement may materially differ from estimates. We believe our provisions for pending claims are appropriate. The ultimate outcome, however, may differ from the provided estimate, which could have either a positive or an adverse impact on our results of operations and financial condition.

Although our products are designed to meet all relevant safety standards and recommendations globally, we cannot guarantee we will not become subject to product liability claims or be held liable for such claims or be required to comply with future regulatory changes in this area, which could have a material adverse effect on our business and financial condition. 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 through a reduction in the demand for mobile devices having an adverse effect, for instance, through 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 29, Provisions, of our consolidated financial statements included in this annual report on Form 20-F.

We may not be able to optimize our capital structure as planned and re-establish our investment grade credit rating or otherwise improve our credit ratings.

Moody's, Standard & Poor's and other credit rating agencies have assigned credit ratings to us. In the event that our credit rating is downgraded, financial costs to us could increase and thereby have a material adverse effect, for instance, on our business, financial condition or results of operations.

We have announced a capital structure optimization program and set a goal of re-establishing our investment grade credit rating. There can be no assurances that we will be able to optimize our capital structure as planned or achieve an investment grade credit rating at the targeted time, or at all, or reduce our interest expenses.

Additionally, returning capital to shareholders reduces our capital available for operations and financing, which could expose us to financial difficulties or require us to incur additional indebtedness under certain circumstances, which in turn could have a material adverse effect on our financial condition.

We may be unable to achieve targeted benefits from, or successfully implement, planned transactions or transactions may result in liabilities.

From time to time, we may consider possible transactions that could complement our existing operations and enable us to grow our business or divest our existing businesses or operations. We have made a number of acquisitions and divestments, in addition to the recent Acquisition of Alcatel Lucent and the Sale of the HERE Business as well as the intended acquisition of Comptel. We may engage in further transactions, such as acquisitions, divestments, mergers or joint ventures in the future. Additionally, we make investments to companies through certain investment funds, including Nokia Growth Partners, and there can be no assurance that such investments will result in new successful technologies that we will be able to monetize.

We cannot provide any assurances that any transactions we initiate, such as acquisitions, divestments, mergers or joint ventures, will ultimately be completed on favorable terms or provide the benefits or return on investment that we had originally anticipated. After reaching an agreement for a transaction, we may need to satisfy pre-closing conditions on acceptable terms, which may prevent us from completing the transaction or result in changes to the scope of the transaction.

Furthermore, we may not succeed in integrating acquired operations with our existing business.

In February 2017, we announced our intention to acquire Comptel through a recommended public cash tender offer. We may not be able to complete the acquisition of Comptel in a timely manner, or at all, or obtain full ownership of Comptel for a number of reasons including competition for the acquisition.

Transactions, including acquisitions, divestments, mergers or joint ventures, involve inherent risks, and the assumptions may be incorrect in evaluating a transaction. Therefore, we may be exposed to unknown or contingent liabilities of acquired businesses, such as those related to contractual obligations, taxes, pensions, environmental liabilities, disputes and compliance matters. Additionally, there are multiple risks that can hamper or delay our ability to integrate acquired businesses and to achieve identified and anticipated operating and financial synergies, including;

- unanticipated delays or inability to proceed with transactions as planned, for instance, due to issues in obtaining regulatory or shareholder approvals, completing public offers or proposals, the imposition of conditions on the acquirer of a business to divest certain assets or impose other obligations due to competition laws or other regulations;
- unanticipated costs or changes in scope, for instance, due to issues with regulators or courts imposing terms on a transaction or obstacles that result in changes required in the scope of the transaction;
- the diversion of management attention from the existing business;
- the potential loss of key employees, customers and suppliers;
- unanticipated changes in business, industry or general economic conditions that affect the assumptions underlying the acquisition;
- potential disputes with sellers, purchasers or other counterparties;
- impairments related to goodwill and other intangible assets, for instance, due to business performance after an acquisition or differences in evaluating the goodwill with respect to the acquired businesses;

- potential limitations on our ability to control any joint ventures; accordingly such transactions may result in increased exposure to operational, compliance, legal or financial risks;
- unexpected costs associated with the separation of the business which is to be divested or with the integration of the business which is acquired;
- additional payment obligations and higher costs resulting from non-performance by divested businesses;
- exposure to contingent liabilities in connection with any indemnity we provide to the purchaser in connection with such divestment;
- potential post-closing claims for indemnification and disputes with purchasers or sellers;
- our dependence on some of the divested businesses as our suppliers in the future; and
- high transaction costs.

We sold our HERE business in a transaction that closed in late 2015. In connection with the Sale of the HERE Business, we have committed to indemnify the buyers for the breach or violation of certain representations and warranties and covenants made by us in the HERE purchase agreement, subject to certain limitations. Significant indemnification claims by the buyers with respect to the Sale of the HERE Business could have a material adverse effect on our financial condition. Furthermore, in connection with the Sale of the HERE Business, the intellectual property portfolio of HERE was transferred to the buyers and, therefore, we no longer benefit from use of such intellectual property.

Significant transactions may result in claims between the parties, which can consume time and management attention, and the outcome of disputes related to significant transactions may be difficult to predict.

We are involved in joint ventures and are exposed to risks inherent to companies under joint management.

We have certain joint ventures, including a significant joint venture in China, Alcatel-Lucent Shanghai Bell Co., Ltd, which is a consolidated subsidiary and which has certain requirements and associated risks. We own 50% plus one share of Alcatel-Lucent Shanghai Bell Co., Ltd, the remainder being owned by China Huaxin, an entity controlled

by the Chinese government. 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. In addition, joint venture companies involve inherent risks such as those associated with a complex corporate governance structure, including lack of transparency and consequent risks of compliance breaches or other similar issues, or issues in dissolving such entities or divesting their shareholdings, assets and liabilities, and also may involve negative public perceptions caused by the joint venture partner that are adverse to us.

Performance failures of our partners, as well as failures to agree to partnering arrangements with third parties could adversely affect us.

If any of the companies we partner and collaborate with were to fail to perform as expected, or if we fail to achieve the collaboration or partnering arrangements needed to succeed, we may be unable to bring our products, services or technologies to market successfully or in a timely manner, which could have a material adverse effect on our operations. We are increasingly collaborating and partnering with third parties to develop technologies, products and services, as well as seeking new revenue streams through partnering arrangements. We also depend on third-party partners in our efforts to monetize our brands, including the Nokia and Nokia Bell Labs brands and technologies, for instance, through arrangements where the brands are licensed to third-party products and the product development and distribution are handled partly or in full by third parties. Additionally, we have outsourced various functions to third parties and are relying on them to provide certain services to us. These arrangements involve the commitment of certain resources, including technology, R&D, services and employees. Although the objective of the collaborative and partnering arrangements is a mutually beneficial outcome for each party, our ability to introduce and provide products and services that are commercially viable and meet our, our customers' and consumers' quality, safety, security and other standards in a timely manner could be hampered from performance or other failures.

Risk factors continued

For instance, in many areas, including finance and human resources-related arrangements, a failure to maintain an efficient relationship with the selected partner may lead to ongoing operational problems or even to severe business disruptions, and we cannot give assurances that the availability of the processes and services upon which we rely will not be interrupted, which could have a material adverse effect on our business operations, in particular related to the integration of Alcatel Lucent. Performance problems may result in missed reporting deadlines, financial losses, missed business opportunities and reputational harm. In addition, as management's focus shifts from a direct to an indirect operational control in these areas, there is a risk that without active management and monitoring of the relationship, the services provided may be below appropriate quality standards. Partners may not meet agreed service levels, in which case, depending on the impacted service, our contractual remedies may not fully cure all of the damages we may suffer. This is particularly true for any deficiencies that would impact the reporting requirements applicable to us as a company listed on multiple stock exchanges.

In order to implement outsourcing arrangements, we may be required to implement changes in our business practices and processes, for instance, to capture economies of scale and operational efficiencies, and to reflect a different way of doing business. Consequently, business processes that were customized for individual business groups or for us generally may be converted to a more standardized format. During a transition to outsourcing, our employees may need to train the partner's staff or be trained in the partners' systems, potentially resulting in the distraction of our employees. 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.

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. Concerns could equally arise from giving third parties access to confidential data, strategic technology applications and books and records.

Additionally, we announced in 2016 a brand licensing partnership with HMD Global. HMD Global is responsible for following our brand and quality guidelines. If HMD Global or other partners act inconsistently with our ethical, sustainability, compliance, brand, or quality standards, this can negatively affect our reputation, the value of our brand, and the business outcome of our partnerships.

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 and adapt to changing business needs.

The carrying amount of our goodwill may not be recoverable.

We assess the carrying amount of goodwill annually, or more frequently if events or changes in circumstances indicate that such carrying amount may not be recoverable. We assess the carrying amount of other identifiable assets if events or changes in circumstances indicate that their carrying amounts may not be recoverable. If we do not generate revenues from our businesses as anticipated, our businesses may not generate sufficient positive operating cash flows. This, or other factors, may lead to a decrease in the value of our assets, including intangible assets and the goodwill attributed to our businesses, resulting in impairment charges that may adversely affect our net profit for the year. While we believe the estimated recoverable values are reasonable, actual performance in the short- and long-term and our assumptions on which we base our calculations could materially differ from our forecasts, which could impact future estimates of our businesses' recoverable values, and may result in impairment charges.

The amount of dividend and equity return distributed to shareholders for each financial period is uncertain.

We cannot assure you that we will pay dividends or deliver return on equity on the shares issued by us, nor is there any assurance as to the amount of any dividend or return of equity we may pay. The payment and the amount of any dividend or return of equity is subject to the discretion of our Board and, ultimately, the general meeting of our shareholders and will depend on available cash balances, retained earnings, anticipated cash needs, 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 law.

We are exposed to pension, employee fund-related and employee healthcare-related risks and we may be unsuccessful in our ability to avoid or control costs resulting from a need for increased funding.

We are exposed to various employee cost-related risks, including those related to pension, employee fund-related obligations and employee healthcare-related risks. In the United States, we maintain significant employee pension benefit plans and a significant retiree benefit plan (providing post-retirement healthcare benefits and post-retirement life insurance cover). Outside the United States, we contribute to pension schemes for large numbers of current and former employees. These plans/schemes have funding requirements that depend on, among other things, various legal requirements, how assets set aside to pay for those obligations are invested, the performance of financial markets, interest rates, assumptions regarding the life expectancy of covered employees and retirees, and medical cost inflation and medical care utilization. To the extent that any of those variables change, the funding required for those plans/schemes may increase, and we may be unsuccessful in our ability to avoid or control costs resulting from such increased funding requirements. Our inability to avoid or control such costs could have a material adverse effect on our results of operations and our financial position.

With respect to our employee costs and pension and other post-retirement obligations, we face the following risks, among others:

- financial market performance and volatility in asset values and discount rates affect the funded status of our pension obligations and could increase funding requirements, including legally required minimum contributions;
- our pension plan participants and post-retirement health plan participants may live longer than has been assumed, which would result in an increase in our benefit obligations. We cannot be certain that the longevity of the participants in our pension plans or retiree healthcare plan will not exceed that indicated by the mortality tables we currently use or that future updates to those tables will not reflect materially longer life expectancies;

- we may not be able to fund our United States post-retirement healthcare and group life insurance costs for our formerly represented retirees with excess pension assets. In accordance with Section 420 of the United States Internal Revenue Code, we currently fund, and expect to be able to continue to fund, our healthcare and group life insurance costs for retirees who, when actively employed, were represented by certain unions with transfers of excess pension assets from our United States inactive occupational pension plan. Based on current actuarial assumptions and based on the present level and structure of benefits and of our benefit plans, we believe that we can continue to fund this obligation. However, deterioration in the funded status of that pension plan could negatively affect our ability to make future Section 420 transfers. Section 420 is currently set to expire in 2025; and
- increases in healthcare costs and an increase in the utilization of healthcare services may significantly increase our United States retiree healthcare costs. We may take steps in the future to reduce the overall cost of our current retiree healthcare plans, and the share of the cost borne by the company, consistent with legal requirements and any collective bargaining obligations. However, cost increases may exceed the company's ability to reduce these costs. Additionally, in the past, the reduction or elimination of United States retiree healthcare benefits by Alcatel Lucent resulted in lawsuits against Alcatel Lucent. Any initiatives that we might undertake to control these costs could similarly result in claims against the company.

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

We engage in the supply of submarine optical fiber cable networks linking mainland to islands, island to island or several points along a coast, with activities also expanding to the supply of broadband infrastructure to oil and gas platforms and other offshore installations. Although thorough surveys, permit processes and safety procedures are implemented during the planning and deployment phases of all of these activities, there is a risk that previously-laid infrastructure, such as electric cables or oil pipelines, may go undetected despite such precautions, and be damaged during the process of installing the telecommunications cable, potentially causing business interruption to third parties operating in the same area and accidental pollution or other disturbances or damage to the environment. While we have contractual limitations in place and maintain insurance coverage to limit our exposure, we cannot provide any assurance that these protections will be sufficient to cover such exposure entirely.

Shares and share capital

Nokia has one class of shares. Each Nokia share entitles the holder to one vote at General Meetings of Nokia.

As of December 31, 2016, the total number of Nokia shares was 5 836 055 012 and our share capital equaled EUR 245 896 461.96. As of December 31, 2016, Nokia and its subsidiary companies owned a total of 115 551 878 Nokia shares, representing approximately 2% of the total number of the shares and voting rights of the company.

In 2016, under an authorization held by the Board, we issued in deviation from shareholders' pre-emptive rights to subscription 1 842 158 031 shares in exchange for the Alcatel Lucent ordinary shares, ADSs and OCEANE convertible bonds to effect the business combination with Alcatel Lucent. The number of shares issued consisted of 1 831 136 063 new shares and 11 021 968 treasury shares.

In 2016, under the authorization held by the Board, we issued a total of 3 408 437 treasury shares to our employees, including certain members of the Group Leadership Team, as settlement under Nokia's equity-based incentive plans. The shares were issued without consideration and in accordance with the plan rules. Additionally, we issued a total of 40 451 treasury shares to employees of former Alcatel Lucent in order to fulfill Nokia's obligations under the liquidity agreements entered into by Nokia and some beneficiaries of Alcatel Lucent employee equity compensation arrangements. The total number of treasury shares issued represented 5.9% of the total number of shares and the total voting rights as of December 31, 2016. The issuances did not have a significant effect on the relative holdings of the other Nokia shareholders, or on their voting power.

In 2016, we issued 1 033 265 new shares following the holders of stock options issued in 2011 and 2012 exercising their option rights.

On November 15, 2016, in line with the previously announced EUR 7 billion capital structure optimization program, the Board resolved to commence a share repurchase program under the authorization granted by the Nokia Annual General Meeting on June 16, 2016. The Board resolved to repurchase a maximum of 575 million Nokia shares up to an equivalent of EUR 1 billion. The program and the authorization granted by the Nokia Annual General Meeting on June 16, 2016 are valid until December 16, 2017. Refer to "—Liquidity and capital resources—Capital structure optimization program".

In 2016, we repurchased a total of 54 296 182 shares, representing 0.9% of the total number of shares and voting rights. The price paid for the shares was based on the current market price of the Nokia share on the securities market at the time of the repurchase.

Information on the authorizations held by the Board in 2016 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 the "Corporate Governance—Compensation", "Financial Statements", "General facts on Nokia—Shares and shareholders" and "General facts on Nokia—Related party transactions" sections.

Refer to Note 20, Shares of the Parent Company, of our consolidated financial statements included in this annual report on Form 20-F for further information regarding Nokia shares.

Board of Directors and management

Pursuant to the Articles of Association of Nokia Corporation, our Board is composed of a minimum of seven and a maximum of 12 members. The Board is elected at least annually at the Annual General Meeting of the shareholders for a term ending at the end of the next Annual General Meeting, which convenes annually by June 30.

The Board has responsibility for appointing and discharging the President and CEO, the Chief Financial Officer and other members of the Group Leadership Team.

For information on remuneration, shares and stock options held by the members of the Board, the President and CEO and the other members of the Group Leadership Team, refer to "Corporate governance—Compensation". For more information regarding corporate governance at Nokia, refer to "Corporate governance—Corporate governance statement" or to our website at http://www.nokia.com/en_int/investors/corporate-governance.



Articles of Association

Our Articles of Association are available on our website www.nokia.com/en_int/investors/corporate-governance. Amendment of the 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. For information on our Articles of Association, refer to "General facts on Nokia—Memorandum and Articles of Association".

Our Articles of Association include provisions for obligation to redeem. Amendment of the provisions of Article 13 of the Articles of Association, "Obligation to purchase shares", requires a resolution supported by three-quarters of the votes cast and three-quarters of the shares represented at the meeting.





Corporate governance

Contents

[Corporate governance statement](#)
[Regulatory framework](#)
[Main corporate governance bodies of Nokia](#)
[General meeting of shareholders](#)
[Board of Directors](#)
[Group Leadership Team and President and CEO](#)
[Risk management, internal control and internal audit functions at Nokia](#)
[Main features of risk management systems](#)
[Description of internal control procedure in relation to the financial reporting process](#)
[Description of the organization of the internal audit function](#)
[Main procedures relating to insider administration](#)
[Auditor fees and services](#)
[Audit Committee pre-approval policies and procedures](#)
[Compensation](#)
[Remuneration governance](#)
[Remuneration policy](#)
[Remuneration Report](#)

Corporate governance statement

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 2015 (the “Finnish Corporate Governance Code”).

Regulatory framework

Our corporate governance practices comply with Finnish laws and regulations as well as with our Articles of Association. We also comply with the Finnish Corporate Governance Code, available at www.cgfinland.fi, with the following exception:

In 2016, we complied with the Finnish Corporate Governance Code, with the exception that we were not in full compliance with recommendation 24, because our restricted share plans did not include performance criteria but were time-based only. The restricted shares vest in three equal tranches on the first, second and third anniversary of the award subject to continued employment with Nokia. Restricted shares were to be granted on a highly limited basis and only in exceptional retention and recruitment circumstances, primarily in the United States, to ensure our ability to retain and recruit talent vital to the future success of the company. The restricted share plan for 2017 is designed in a similar manner, to be used on a limited basis for exceptional purposes related to retention and recruitment, primarily in the United States. The Board approves, upon recommendation from the Board's Personnel Committee, any long-term incentive compensation and all equity plans, programs or similar arrangements of significance that the company establishes for its employees.

We comply with the corporate governance standards of Nasdaq Helsinki, which are applicable due to the listing of our shares on the exchange. Furthermore, as a result of the listing of our American Depositary Shares on the New York Stock Exchange (the “NYSE”) and our registration under the U.S. Securities Exchange Act of 1934, we must comply with the U.S. 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, which is available at <http://nysemanual.nyse.com/lcm/>. We comply with these standards to the extent such provisions are applicable to foreign private issuers.

To the extent any non-domestic rules would require a violation of the laws of Finland, we are obliged to comply with Finnish law. There are no significant differences in the corporate governance practices applied by Nokia compared to those applied by United States 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. All other plans that include the delivery of company stock in the form of newly issued shares or treasury shares require shareholder approval at the time of the delivery of the shares, unless shareholder approval has been granted through an authorization to the Board, a maximum of five years earlier. The NYSE corporate governance standards require that the equity compensation plans be approved by a company's shareholders. Nokia aims to minimize the necessity for, or consequences of, conflicts between the laws of Finland and applicable non-domestic corporate governance standards.

The Board has also adopted corporate governance guidelines (“Corporate Governance Guidelines”) to reflect our commitment to good corporate governance. Our Corporate Governance Guidelines are available on our website at http://www.nokia.com/en_int/investors/corporate-governance.

Main corporate governance bodies of Nokia

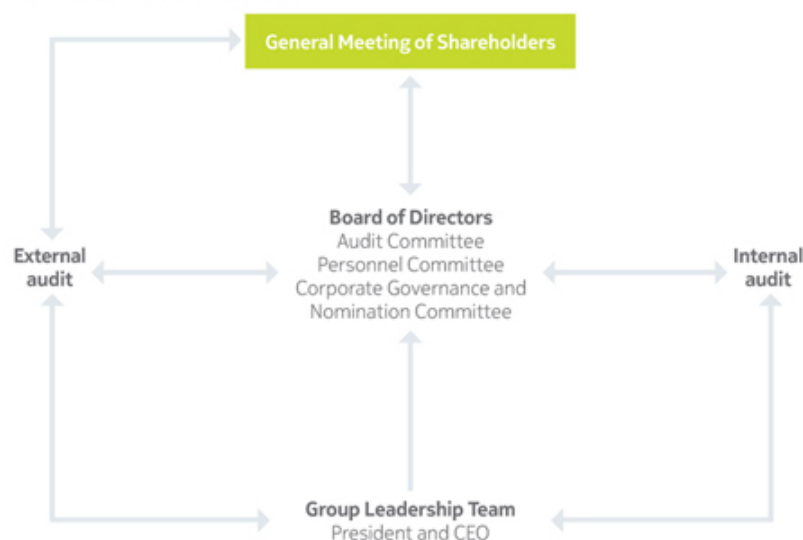
Pursuant to the provisions of the Finnish Limited Liability Companies Act (2006/624, as amended) (the “Finnish Companies Act”) and Nokia's Articles of Association, the control and management of Nokia are divided among the shareholders at a general meeting, the Board, the President and CEO and the Group Leadership Team, chaired by the President and CEO.

General meeting of shareholders

The shareholders may exercise their decision-making power and their right to speak and ask questions at the general meeting of shareholders. Each Nokia share entitles a shareholder to one vote at general meetings of Nokia. Pursuant to the Finnish Companies Act, an Annual General Meeting must convene annually by June 30. The Annual General Meeting decides, among other things, on the election and remuneration of the Board, the adoption of the annual accounts, the distribution of profit shown on the balance sheet, and 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.

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

Corporate governance framework



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 Corporation, we have a Board that is composed of a minimum of seven and a maximum of 12 members. The Board is elected at least annually at each Annual General Meeting with a simple majority of the shareholders' votes cast at the meeting. The term of a Board member shall begin at the closing of the general meeting at which he or she was elected, or later as resolved by the general meeting, and expire at the closing of the following Annual General Meeting. The Annual General Meeting convenes by June 30 annually.

The Annual General Meeting held on June 16, 2016 elected the following nine members to the Board: Vivek Badrinath, Bruce Brown, Louis R. Hughes, Jean C. Monty, Elizabeth Nelson, Olivier Piou, Risto Siilasmaa, Carla Smits-Nusteling and Kari Stadigh. Vivek Badrinath subsequently resigned on July 29, 2016 since when the Board has consisted of eight members.

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. On June 16, 2016, the Board elected Risto Siilasmaa to continue to serve as the Chair and Olivier Piou as the Vice Chair of the Board. 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 he or she is prevented from performing his or her duties.

We do not have a policy concerning the combination or separation of the roles of the Chair of the Board and the President and CEO, but the leadership structure is dependent on our needs, shareholder value and other relevant factors applicable from time to time, while respecting the highest corporate governance standards. In 2016, Rajeev Suri served as the President and CEO, while Risto Siilasmaa served as the Chair of the Board.

The current members of the Board are all non-executive. For the term of the Board that began at the Annual General Meeting on June 16, 2016, all Board member candidates were determined to be independent under the Finnish corporate governance standards and the rules of the NYSE.

The Board has adopted principles concerning Board diversity describing (a) our commitment to promoting diverse Board composition and (b) how diversity is embedded into our processes and practices when identifying and proposing new Board candidates as well as re-election of current Board members.

At Nokia, Board diversity consists of a number of individual elements, including gender, age, nationality, cultural and educational backgrounds, skills and experience. At Nokia diversity is not a static concept, but rather a relevant mix of required elements for the Board as a whole that evolves with time based on, among other things, the relevant business objectives and future needs of Nokia. Board diversity is treated as a means of improvement and development rather than an end in itself.

Nokia acknowledges and supports the resolution adopted by the Finnish Government on February 17, 2015 on gender equality on the boards of directors of Finnish large and mid-cap listed companies. Accordingly, we aim to have representation of 40% of both genders in our Board by January 1, 2020 by proposing a corresponding Board composition for shareholder approval in the Annual General Meeting of 2019, at the latest. At the Annual General Meeting on June 16, 2016, Carla Smits-Nusteling was elected to the Board after which the gender balance of the Board was 78% male and 22% female. After Vivek Badrinath's resignation from the Board on July 29, 2016, the gender balance of the Board has been 75% male and 25% female. We report annually our objectives relating to both genders being represented on our Board, the means to achieve them, and the progress we have made in achieving them.

Corporate governance statement continued

Members of the Board of Directors

Set forth below are the current members of the Board and their biographical details. Information about the share ownership of the Board members is disclosed in the Remuneration Statement, refer to “—Compensation” below.

Chair Risto Siilasmaa

b. 1966

Chair of the Nokia Board. Board member since 2008. Chair since 2012. Chair of the Corporate Governance and Nomination Committee.

Master of Science (Eng.), Helsinki University of Technology, Finland.

President and CEO of F-Secure Corporation 1988–2006.

Chairman of the Board of Directors of F-Secure Corporation. Chairman of the Board of Directors of the Federation of Finnish Technology Industries. Member of the Board of Directors of the Confederation of Finnish Industries (EK). Member of European Roundtable of Industrialists.

Chairman of the Board of Directors of Elisa Corporation 2008–2012. Member of the Board of Directors of Alcatel Lucent SA 2016.

Vice Chair Olivier Piou

b. 1958

Vice Chair of the Nokia Board. Board member and Vice Chair since 2016. Member of the Personnel Committee and the Corporate Governance and Nomination Committee.

Degree in Engineering, École Centrale de Lyon, France.

Chief Executive Officer of Gemalto N.V. 2006–2016. Chief Executive Officer of Axalto N.V. 2004–2006. With Schlumberger 1981–2004, including numerous management positions in the areas of technology, marketing and operations, in France and the United States.

Member of the Board of Directors of Gemalto N.V. Member of the Board of Directors of ErYoch S.A.R.L. Member of the Board of Directors of Alcatel Lucent SA 2008–2016.

Bruce Brown

b. 1958

Nokia Board member since 2012. Chair of the Personnel Committee. Member of the Corporate Governance and Nomination Committee.

MBA (Marketing and Finance), Xavier University, the United States. BS (Chemical Engineering), Polytechnic Institute of New York University, the United States.

Retired from The Procter & Gamble Company in 2014. Chief Technology Officer of the Procter & Gamble Company 2008–2014. Various executive and managerial positions in Baby Care, Feminine Care, and Beauty Care units of The Procter & Gamble Company since 1980 in the United States, Germany and Japan.

Member of the Board of Directors of Agency for Science, Technology & Research (A*STAR) in Singapore. Member of the Board of Directors, the Audit Committee and the Nominating and Corporate Governance Committee of P. H. Glatfelter Company. Member of the Board of Directors, the Audit Committee and the Compensation Committee of Medpace, Inc.

Louis Hughes

b. 1949

Nokia Board member since 2016. Member of the Audit Committee.

Master's Degree in Business Administration, Harvard University, Graduate School of Business, the United States. Bachelor of Mechanical Engineering, General Motors Institute, now Kettering University, the United States.

President & Chief Operating Officer of Lockheed Martin in 2000. Executive Vice President of General Motors Corporation 1992–2000. President of General Motors International Operations 1992–1998. President of General Motors Europe 1992–1994.

Chairman of InZero Systems (formerly GBS Laboratories) (the United States). Independent director and member of the Audit Committee of AkzoNobel. Independent director and chairman of the Audit, Finance and Compliance Committee of ABB. Executive advisor partner of Wind Point Partners.

Member of the Board of Directors of Alcatel Lucent SA 2008–2016.

Jean Monty

b. 1947

Nokia Board member since 2016. Member of the Personnel Committee.

Bachelor of Arts, Collège Sainte-Marie de Montréal, Canada. Master of Arts in Economics, University of Western Ontario, Canada. Master of Business Administration, University of Chicago, the United States.

Chairman of the Board and Chief Executive Officer of Bell Canada Enterprises until 2002. President and Chief Executive Officer of Nortel Networks Corporation beginning in 1993.

Member of the Boards of Directors of Bombardier and Fiera Capital Inc.

Member of the Board of Directors of Alcatel Lucent SA 2008–2016.

Elizabeth Nelson

b. 1960

Nokia Board member since 2012. Chair of the Audit Committee.

MBA (Finance), the Wharton School, University of Pennsylvania, the United States. BS (Foreign Service), Georgetown University, the United States.

Executive Vice President and Chief Financial Officer, Macromedia, Inc. 1997–2005. Vice President, Corporate Development, Macromedia, Inc. 1996–1997. Various roles in Corporate Development and International Finance, Hewlett-Packard Company 1988–1996.

Chairman of the Board of Directors of DAI. Independent Lead Director and Chair of the Audit Committee of Zendesk Inc. Member of the Board of Directors and Chair of the Audit Committee of Pandora Media.

Member of the Boards of Directors of Brightcove, Inc. 2010–2014, SuccessFactors, Inc. 2007–2012 and Ancestry.com, Inc. 2009–2012.

Carla Smits-Nusteling

b. 1966

Nokia Board member since 2016. Member of the Audit 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 in KPN 2000–2009. Various financial and operational positions in TNT/PTT Post 1990–2000.

Member of the Supervisory Board since 2013 and Chair of the Audit Committee of ASML. Member of the Board of Directors since 2013 and Chair of the Audit Committee of TELE2 AB. Member of the Management Board of the Unilever Trust Office since 2015. Lay Judge in the Enterprise Court of the Amsterdam Court of Appeal since 2015.

Kari Stadigh

b. 1955

Group CEO and President of Sampo plc. Nokia Board member since 2011. Member of the Personnel Committee and the Corporate Governance and Nomination Committee.

Master of Science (Eng.), Helsinki University of Technology, Finland. Bachelor of Business Administration, Hanken School of Economics, Helsinki, Finland.

Deputy CEO of Sampo plc 2001–2009. President of Sampo Life Insurance Company Limited 1999–2000. President of Nova Life Insurance Company Ltd 1996–1998. President and COO of Jaakko Pöyry Group 1991–1996.

Member of the Board of Directors and Chair of the Board's Risk Committee of Nordea Bank AB (publ). Chairman of the Board of Directors of If P&C Insurance Holding Ltd (publ) and Mandatum Life Insurance Company Limited. Member of the Board of Directors of the Federation of Finnish Financial Services. Member of the Board of Directors of Waypoint Capital Group Holdings Ltd. Member of the Board of Directors of Niilo Helanderin Säätiö.

The following individuals served on the Board until the close of the Annual General Meeting held on June 16, 2016, or later if indicated.

Simon Jiang

b. 1953

Board member 2015–2016. Served as a member of the Personnel Committee until June 16, 2016.

Jouko Karvinen

b. 1957

Board member 2011–2016. Served as a member of the Audit Committee and the Corporate Governance and Nomination Committee until June 16, 2016.

Vivek Badrinath

until July 29, 2016

b. 1969

Board member 2014–2016. Served as a member of the Audit Committee until July 29, 2016.

Chair Risto Siilasmaa



Vice Chair Olivier Piou



Bruce Brown



Louis Hughes



Jean Monty



Elizabeth Nelson



Carla Smits-Nusteling



Kari Stadigh



Corporate governance statement continued

Operations of the Board of Directors

The Board represents and is accountable to the shareholders of Nokia. 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 which they reasonably and honestly believe to be in the best interests of Nokia and its shareholders. In discharging that 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 from time to time.

The Board is ultimately responsible for monitoring and reviewing Nokia's financial reporting process, effectiveness of related control and audit functions and the independence of Nokia's external auditor, as well as for monitoring the statutory audit of the annual and consolidated financial statements. 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 financial commitments that may not be exceeded without separate Board approval.

In risk management policies and processes, 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 integral parts 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 "—Risk management, internal control and internal audit functions at Nokia—Main features of risk management systems" below.

The Board has the responsibility for appointing and discharging the President and CEO and the other members of the Group Leadership Team. Since May 2014, Rajeev Suri has served as the President and CEO. His rights and responsibilities include those allotted to the President under Finnish law and he also chairs the Group Leadership Team.

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

The Board has three committees: the Audit Committee, the Corporate Governance and Nomination Committee and the Personnel Committee. These committees assist the Board in its duties pursuant to their respective committee charters. The independent directors of the Board elect the members and chairs of the Board's committees from among the Board's independent directors based on the recommendation of the Corporate Governance and Nomination Committee and based on each committee's member qualification standards. The Board may also establish ad hoc committees for detailed reviews or consideration of particular topics to be proposed for the approval of the Board.

In line with our Corporate Governance Guidelines, the Board conducts annual performance evaluations, which also include evaluations of the Board committees' work as well as the Board and Committee Chairs and individual Board members. In 2016, the Board conducted an evaluation process consisting of self-evaluations and peer evaluations, as well as interviews. The evaluation process included both numeric assessments and the possibility to provide more detailed written comments. The feedback from selected members of management was also requested as part of this evaluation process. The results of the evaluation are discussed and analyzed by the entire Board and improvement actions are agreed based on such discussion.

Meetings of the Board of Directors

The Board held 27 meetings excluding committee meetings during 2016, of which approximately 30% were regularly scheduled meetings held in person, complemented by meetings via video or conference calls or by other means. Additionally, in 2016, the non-executive directors held meetings regularly without management in connection with Board meetings. Also, the independent directors held one separate meeting in 2016.

Directors' attendance at Board meetings, including committee meetings but excluding meetings among the non-executive directors or independent directors only, in 2016 is set forth in the table below:

	Board meetings %	Audit Committee meetings %	Corporate Governance and Nomination Committee meetings %	Personnel Committee meetings %
Vivek Badrinath (until July 29, 2016)	100	100		
Bruce Brown	100		100	100
Elizabeth Doherty (until January 8, 2016)	100			
Louis Hughes (from January 8, 2016)	96	100		
Simon Jiang (until June 16, 2016)	71			75
Jouko Karvinen (until June 16, 2016)	85	80		
Jean Monty (from January 8, 2016)	96	100(1)		100(2)
Elizabeth Nelson	93	100		
Olivier Piou (from January 8, 2016)	96		85	88
Risto Siilasmaa	100		100	
Carla Smits-Nusteling (from June 16, 2016)	100	100		
Kari Stadigh	96		85	100

(1) Until June 16, 2016

(2) From June 16, 2016

Additionally, many of the directors attended, as non-voting observers, in meetings of a committee of which they were not a member.

According to Board practices, the non-executive directors meet without management in connection with each regularly scheduled meeting. Such sessions are chaired by the non-executive Chair of the Board. If 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 meet separately at least once annually.

All the directors who served on the Board for the term until the close of the Annual General Meeting in 2016, except Jouko Karvinen and Simon Jiang, attended Nokia's Annual General Meeting held on June 16, 2016. The Finnish Corporate Governance Code recommends that the Chair and members of the Board and the President shall be present at the general meeting of shareholders to ensure the possibility for the shareholders to exercise their right to present questions to both the Board and management.

Committees of the Board of Directors

The **Audit 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 rules of Nasdaq Helsinki and the NYSE. From June 16, 2016, the Audit Committee consisted of the following four members of the Board: Elizabeth Nelson (Chair), Vivek Badrinath, Louis Hughes and Carla Smits-Nusteling. Since Vivek Badrinath's resignation from the Board on July 29, 2016, the Audit Committee has consisted of the following three members: Elizabeth Nelson (Chair), Louis Hughes and Carla Smits-Nusteling.

The Audit Committee is established by the Board primarily for the purpose of oversight of the accounting and financial reporting processes of Nokia and the audits of its financial statements. The Committee is responsible for assisting the Board in the oversight of:

- the quality and integrity of the company's financial statements and related disclosures;
- the statutory audit of the company's financial statements;
- 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 and risk management and assurance function;
- the performance of the internal audit function; and
- the company's compliance with legal and regulatory requirements, including the performance of its ethics and compliance program. The Committee also maintains procedures for the receipt, retention and treatment of complaints received by the company 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 the company's financial statements and related disclosures.

For further information on internal control over financial reporting, refer to "—Risk management, internal control and internal audit functions at Nokia —Description of internal control procedures in relation to the financial reporting process" below.

Corporate governance statement continued

Under Finnish law, an external auditor is elected by shareholders by a simple majority vote at the Annual General Meeting for one year at a time. The Audit Committee prepares the proposal to the shareholders, upon its evaluation of the qualifications and independence of the external auditor, of the nominee for election or re-election. Under Finnish law, the fees of the external auditor are also approved by the shareholders by a simple majority vote at the Annual General Meeting. The Committee prepares the proposal to the shareholders in respect of the fees of the external auditor, and approves the external auditor's annual audit fees under the guidance given by the Annual General Meeting. For information about the fees paid to Nokia's external auditor, PricewaterhouseCoopers Oy, during 2016, refer to the "—Auditor fees and services" below.

In discharging its oversight role, the Audit Committee has full access to all company books, records, facilities and personnel. The Committee may appoint counsel, auditors or other advisers in its sole discretion, and must receive appropriate funding, as determined by the Audit Committee, from Nokia for the payment of compensation to such outside advisers.

The Board has determined that all members of the Audit Committee, including its Chair, Elizabeth Nelson, are "audit committee financial experts" as defined in the requirements of Item 16A of the annual report on Form 20-F filed with the U.S. Securities and Exchange Commission ("SEC"). Ms. Nelson and each of the other members of the Audit Committee are "independent directors" as defined by Finnish law and Finnish Corporate Governance Code and in Section 303A.02 of the NYSE Listed Company Manual.

The Audit Committee meets a minimum four times a year based upon a schedule established at the first meeting following the appointment of the Committee. The Committee meets separately with the representatives of Nokia's management, heads of the internal audit, and ethics and compliance functions, and the external auditor in connection with each regularly scheduled meeting. The head of the internal audit function has, at all times, direct access to the Audit Committee, without the involvement of management.

The Audit Committee held eight (8) meetings in 2016. The average attendance at the meetings was 97%. Additionally, any director who so wishes may attend meetings of the Audit Committee as a non-voting observer.

The Corporate Governance and Nomination Committee consists of three to five members of the Board who meet all applicable independence requirements as stipulated by Finnish law, the rules of Nasdaq Helsinki and the NYSE. From June 16, 2016, the Corporate Governance and Nomination Committee has consisted of the following four members of the Board: Risto Siilasmaa (Chair), Bruce Brown, Olivier Piou and Kari Stadigh.

The Corporate Governance and Nomination Committee's purpose is to prepare the proposals for the general meetings in respect of the composition of the Board and the director remuneration to be approved by the shareholders, and to monitor issues and practices related to corporate governance and to propose necessary actions in respect thereof.

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 the proposal to the shareholders on the director nominees for election at the general meetings as well as director remuneration;
- monitoring significant developments in the law and practice of corporate governance and of the duties and responsibilities of directors of public companies;
- assisting the Board and each Committee of the Board in its annual performance evaluations, including establishing criteria to be applied in connection with such evaluations;
- developing and recommending to the Board and administering Nokia's Corporate Governance Guidelines; and
- reviewing Nokia's disclosure in the corporate governance statement.

The Committee has the power to appoint recruitment firms or advisers to identify appropriate candidates. The Committee may also appoint counsel or other advisers, as it deems appropriate from time to time. The Committee has the sole authority to appoint or terminate the services of such firms or advisers and to review and approve such firm's or adviser's fees and other retention terms. It is the Committee's practice to appoint a recruitment firm to identify new director candidates.

The Corporate Governance and Nomination Committee held seven (7) meetings in 2016. The average attendance at the meetings was 93%. Additionally, any director who so wishes may attend meetings of the Corporate Governance and Nomination Committee as a non-voting observer.

The Personnel Committee consists of a minimum of three members of the Board who meet all applicable independence requirements as stipulated by Finnish law, the rules of Nasdaq Helsinki and the NYSE. From June 16, 2016, the Personnel Committee has consisted of the following four members of the Board: Bruce Brown (Chair), Jean Monty, Olivier Piou and Kari Stadigh.

The primary purpose of the Personnel Committee is to oversee the personnel-related policies and practices at Nokia, as described in the Committee charter. It assists the Board in discharging its responsibilities in relation to all compensation, including equity compensation, of the company's executives and their terms of employment. The Committee has overall responsibility for evaluating, resolving and making recommendations to the Board regarding:

- compensation of the company's top executives and their terms of employment;
- all equity-based plans;
- incentive compensation plans, policies and programs of the company affecting executives; and
- other significant incentive plans.

The Committee is responsible for overseeing compensation philosophy and principles and ensuring the above compensation programs are performance-based, and designed to contribute to long-term shareholder value creation and alignment to shareholders' interests, properly motivate management, and support overall corporate strategies.

The Personnel Committee held nine (9) meetings in 2016. The average attendance at the meetings was 93%. Additionally, any director who so wishes may attend meetings of the Personnel Committee as a non-voting observer.

Further information

The Corporate Governance Guidelines concerning the directors' responsibilities, the composition and election of the members of the Board, its committees and certain other matters relating to corporate governance are available on our website at http://www.nokia.com/en_int/investors/corporate-governance. We have a Code of Conduct that is applicable to all of our employees, directors and management and, in addition, we have a Code of Ethics applicable to the President and CEO, Chief Financial Officer and Corporate Controller. These documents and the charters of the Audit Committee, the Corporate Governance and Nomination Committee and the Personnel Committee are available on our website at http://www.nokia.com/en_int/investors/corporate-governance.

Group Leadership Team and the President and CEO

We have a Group Leadership Team that is responsible for the operative management of Nokia. The Chair and members of the Group Leadership Team are appointed by the Board. 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.

Corporate governance statement continued

Members of the Nokia Group Leadership Team

Set forth below are the current and appointed members of the Group Leadership Team and their biographical details. Information about the shares and share-based rights of the members of the Group Leadership Team is disclosed in the Remuneration Statement; refer to “—Compensation” below.

During 2016 and thereafter, the following new appointments were made to the Group Leadership Team:

- Federico Guillén was appointed the President of Fixed Networks and member of the Group Leadership Team as of January 8, 2016;
- Basil Alwan was appointed the President of IP/Optical Networks and member of the Group Leadership Team as of January 8, 2016;
- Bhaskar Gorti was appointed the President of Applications & Analytics and member of the Group Leadership Team as of January 8, 2016;
- Hans-Jürgen Bill was appointed the Chief Human Resources Officer and member of the Group Leadership Team as of January 8, 2016;
- Kathrin Buvac was appointed the Chief Strategy Officer and member of the Group Leadership Team as of January 8, 2016;
- Ashish Chowdhary was appointed the Chief Customer Operations Officer and member of the Group Leadership Team as of January 8, 2016;
- Barry French was appointed the Chief Marketing Officer and member of the Group Leadership Team as of January 8, 2016;

- Marc Rouanne was appointed the Chief Innovation & Operating Officer and member of the Group Leadership Team as of January 8, 2016 and President of Mobile Networks as of April, 1 2017;
- Maria Varsellona was appointed the Chief Legal Officer and member of the Group Leadership Team as of January 8, 2016;
- Kristian Pullola was appointed the Chief Financial Officer and member of the Group Leadership Team as of January 1, 2017;
- Igor Leprince was appointed the President of Global Services and member of the Group Leadership Team as of April 1, 2017;
- Monika Maurer was appointed Chief Operating Officer and member of the Group Leadership Team as of April 1, 2017; and
- Marcus Weldon was appointed Chief Technology Officer and President of Nokia Bell Labs, and member of the Group Leadership Team as of April 1, 2017.

Further, during 2016 and thereafter, the following members of the Group Leadership Team resigned:

- Ramzi Haidamus, formerly President of Nokia Technologies, stepped down from the Group Leadership Team as of August 31, 2016;
- Timo Ihamuotila, formerly Chief Financial Officer, stepped down from the Group Leadership Team as of December 31, 2016; and
- Samih Elhage, President of Mobile Networks, will step down from the Group Leadership Team as of March 31, 2017.

Rajeev Suri

b. 1967
President and Chief Executive Officer of Nokia Corporation. Chair of the Nokia Group Leadership Team since 2014. Joined Nokia in 1995.

Bachelor of Engineering (Electronics and Communications), Manipal Institute of Technology, Karnataka, India.

CEO, Nokia Solutions and Networks 2009–2014. Head of Services, Nokia Siemens Networks 2007–2009. Head of Asia Pacific, Nokia Siemens Networks April 2007. Senior Vice President, Nokia Networks Asia Pacific 2005–2007. Vice President, Hutchison Customer Business Team, Nokia Networks 2004–2005. General Manager, Business Development, Nokia Networks Asia Pacific 2003. Sales Director–BT, O2 and Hutchison Global Customers, Nokia Networks 2002. Director, Technology and Applications, BT Global Customer, Nokia Networks 2000–2001. Head of Global Competitive Intelligence, Nokia Networks 1999–2000. Head of Product Competence Center, Nokia Networks South Asia 1997–1999. System Marketing Manager, Cellular Transmission, Nokia Networks India 1995–1997. Head of Group Procurement, imports and special projects, Churchgate Group, Nigeria 1993–1995. National Account Manager–Transmission/Manager–Strategic Planning, ICL India (ICIM) 1990–1993. Production Engineer, Calcom Electronics 1989.

Member of the Board of Directors of Alcatel Lucent SA 2016.

Rajeev Suri



Basil Alwan



Basil Alwan

b. 1962
President of IP/Optical Networks. Group Leadership Team member since 2016. Joined Nokia in 2016.

Bachelor in Computer Engineering, University of Illinois at Urbana-Champaign, the United States.

Previously President of IP Routing and Transport, Alcatel Lucent 2012–2016. President of IP Division, Alcatel Lucent 2003–2012. Founder, President and CEO, TiMetra Networks 2000–2003. Vice President and General Manager, Bay Networks (acquired by Nortel) Enterprise Products Division (EPD) 1997–2000. Vice President of Product Management and Marketing, Rapid City Communications 1996–1997.

Hans-Jürgen Bill



Hans-Jürgen Bill

b. 1960
Chief Human Resources Officer. Group Leadership Team member since 2016. Joined Nokia Siemens Networks in 2007.

Diploma in Telecommunications from the University of Deutsche Bundespost, Dieburg/Darmstadt, Germany. Diploma in Economics from the University of Applied Sciences, Pforzheim, Germany.

Executive Vice President, Human Resources, Nokia Corporation 2014–2016. Head of Human Resources, NSN 2009–2014. Head of West South Europe region, NSN 2007–2009. Head of Asia Pacific for Mobile Networks, Siemens 2003–2007. Head of Operations for Mobile Networks, Siemens 2001–2003. Head of Region Central-East and North Europe for Mobile Networks, Siemens 1998–2001. Head of Mobile Networks in Indonesia, Siemens 1994–1998. Various management positions, Siemens 1983–1994.

Kathrin Buvac

b. 1980
Chief Strategy Officer. Group Leadership Team member since 2016. Joined Nokia Siemens Networks in 2007.

Degree in Business Information Systems from University of Cooperative Education, Germany. Bachelor Degree in Business Administration from Open University, London, the United Kingdom.

Vice President, Corporate Strategy, Nokia Networks 2014–2016. Chief of staff to the CEO, Nokia Solutions and Networks 2011–2013. Head of Strategic Projects, Business Solutions, Nokia Siemens Networks 2009–2011. General Manager, Integration Programme, Nokia Siemens Networks 2007–2009. General Manager, Corporate Audit, Siemens Holding S.p.A. 2006–2007. Head of Controlling International Businesses, Siemens Communications 2003–2006. Head of Performance Controlling USA, Siemens Communications 2002–2003. Business Process Manager Global IT Strategy, Siemens Communications 2001–2002. Business Analyst, EADS Aerospace and Defence 1999–2000.

Ashish Chowdhary

b. 1965
Chief Customer Operations Officer. Group Leadership Team member since 2016. Joined Nokia in 2003.

MBA, Wharton School, University of Pennsylvania, Philadelphia, the United States. MS Computer Science, Emory University, Atlanta, the United States. BA Mathematics from University of Delhi, India.

Executive Vice President and Chief Business Officer at Nokia Networks 2015–2016. Head of Customer Operations Asia, Middle East & Africa (AMEA), Nokia Networks 2011–2015. Head of Global Services, Nokia Siemens Networks 2009–2010. Head of Managed Services, Nokia Siemens Networks 2007–2009. Country Head India, Nokia Networks 2003–2007. Vice President for Enterprise Business, Hughes Communications Ltd 2000–2003 and 1994–1998. Software and Project Engineer, Hughes Network Systems 1989–1993. Teaching Assistant, Computer Science, Emory University 1987–1989.

Kathrin Buvac



Ashish Chowdhary



Corporate governance statement continued

Samih Elhage

b. 1961

President of Mobile Networks until March 31, 2017. Group Leadership Team member since 2014. Joined Nokia Siemens Networks in 2012.

Bachelor of Electrical Engineering (telecommunications), University of Ottawa, Canada. Bachelor of Economics, University of Ottawa, Canada. Master of Electrical Engineering (telecommunications), École Polytechnique de Montréal, Canada.

Chief Financial and Operating Officer, Nokia Networks 2013–2016. Chief Operating Officer, NSN 2012–2013. Senior Advisor, leading private equity and global management consulting firms 2011–2012. President, Carrier Voice over IP and Applications Solutions (CVAS) division, Nortel 2008–2010. Leadership positions in Operations, Business Transformation, Broadband Networks, Optical Networks, and Core Data Networks, Nortel 1998–2008. Multiple leadership and management roles related to network development at Bell Canada 1990–1998.

Vice Chairman of the Board of Directors of Alcatel-Lucent Shanghai Bell.

Member of the Board of Directors of Alcatel Lucent SA 2016.

Barry French

b. 1963

Chief Marketing Officer. Group Leadership Team member since 2016. Joined Nokia in 2006.

Master's Degree in International Affairs from Columbia University's School of International and Public Affairs, New York, the United States. Bachelor of Arts degree in Political Science, Bates Colleges, Lewiston, Maine, the United States.

Chief Marketing Officer and Executive Vice President, Marketing and Corporate Affairs, Nokia 2014–2016. Head of Marketing and Corporate Affairs, Nokia Siemens Networks 2010–2014. Head of Communications, Nokia Siemens Networks 2006–2010. Vice President, Corporate Communications, United Airlines 2004–2006. Director, Corporate Communications, Dell 2000–2004. Additional roles included communications, government relations and management positions, Engineering Animation, Raytheon, KRC Research and the Sawyer/Miller Group.

Bhaskar Gorti

b. 1966

President of Applications & Analytics. Group Leadership Team member since 2016. Joined Nokia in 2016.

Master's degree in Electrical Engineering from Virginia Polytechnic Institute and State University, Blacksburg, the United States. Bachelor's degree in Technology and Electrical Engineering from National Institute of Technology, Warangal, India.

Previously President of IP Platforms, Alcatel Lucent 2015–2016. Senior Vice President and General Manager, Communications Global Business Unit, Oracle 2006–2015. Senior Vice President, Portal Software 2002–2006.

Federico Guillén

b. 1963

President of Fixed Networks. Group Leadership Team member since 2016. Joined Nokia in 2016.

Degree in Telecommunications Engineering, ETSIT at Universidad Politécnica de Madrid, Spain. Master's degree in Switching & Communication Architectures, ETSIT at Universidad Politécnica de Madrid, Spain. Master's Degree in International Management, ESC Lyon and Alcatel, France.

President of Fixed Networks, Alcatel Lucent 2013–2016. President and CEO of Alcatel Lucent Spain & Global Account Manager Telefonica, Alcatel Lucent 2009–2013. Vice President Sales of Vertical Market Sales in Western Europe, Alcatel Lucent 2009. Head of Regional Support Centre within Alcatel Lucent's Fixed Access Division for South Europe, MEA, India and CALA 2007–2009. CEO, Alcatel Mexico & Global Account Manager, Telmex 2003–2007. Various R&D, Portfolio and Sales Management Positions, Telettra and then Alcatel in Spain, Belgium and U.S. 1989–2003.

Igor Leprince

b. 1971

President of the Global Services. Group Leadership Team member as of April 1, 2017. Joined Nokia Siemens Networks in 2007.

Master's degree in Telecommunications and Network Engineering, E.N.S.T. Paris, France. Bachelor's and Master's degree in Computer Science and Systems and Networks, University Paris 7, Paris, France.

Executive Vice President, Global Services, Nokia since 2014. Senior Vice President and Head of Middle East & Africa, Nokia Networks 2011–2014. Vice President, Head of Care, Global Services, Nokia Siemens Networks 2010–2011. Vice President, Head of Network Planning & Optimization, Global Services, Nokia Siemens Networks 2007–2010. Senior Vice president, LCC International 2007. Managing Director EMEA, WFI 2005–2007.

Samih Elhage



Barry French



Bhaskar Gorti



Federico Guillén



Igor Leprince



Monika Maurer



Monika Maurer

b. 1956
Senior Vice President, Chief Operating Officer. Group Leadership Team member as of April 1, 2017. Joined Nokia in 2016.

Diploma in Physics and Chemistry, the University of Stuttgart, Germany. Diploma in Pedagogy, State University for Pedagogic, Stuttgart, Germany.

Chief Operating Officer, Fixed Networks Business Group, Nokia 2016–2017. Chief Operating Officer, Fixed Networks Business Line, Alcatel Lucent 2012–2016. Vice President Presales Europe, Middle East & Africa, Alcatel Lucent 2010–2012. President, Product Attached Services Division, Alcatel Lucent 2009–2010. Executive Vice President Supply Chain and Procurement, Alcatel Shanghai Bell 2006–2008.

Kristian Pullola

b. 1973
Chief Financial Officer. Group Leadership Team member since 2017. Joined Nokia in 1999.

Master of Science (Economics), the Hanken School of Economics, Helsinki, Finland. Finance diploma, the Stockholm School of Economics, Stockholm, Sweden.

Senior Vice President, Corporate Controller, Nokia 2011–2016. Vice President, Treasury & Investor Relations, Nokia 2009–2011. Vice President, Corporate Treasurer, Nokia 2006–2008. Director, Treasury Finance & Control, Nokia 2003–2006. Various roles in Nokia Treasury 1999–2003. Associate, Citibank International 1998–1999.

Member of the Board of Directors of Ilmarinen Mutual Pension Insurance Company.

Marc Rouanne

b. 1963
Chief Innovation & Operating Officer until March 31, 2017 and President of Mobile Networks as of April 1, 2017. Group Leadership Team member since 2016. Joined Nokia Siemens Networks in 2008.

Ph.D. in Information Theory from University of Notre Dame, Indiana, the United States. Engineering degree in Signal Processing from Supélec, France. Degree in Computer Science from Université d'Orsay, France.

Executive Vice President, Mobile Broadband, Nokia Networks 2011–2016. Head of Network Systems, Nokia Siemens Networks 2010–2011. Head of Radio Access, Nokia Siemens Networks 2008–2009. Executive Vice President of Alcatel, President of Convergence Business Group, Alcatel Lucent 2006–2008. Chief Operating Officer, then President Wireless Business Group, then Executive Vice President, Alcatel 2003–2006. VP positions, then Chief Operating Officer, then President Wireless Business Division, Alcatel 1997–2003. R&D and Engineering Director positions, Matra and Nortel Matra Cellular 1988–1997.

Chairman of the Board of Directors of Alcatel Lucent SA 2016.

Maria Varsellona

b. 1970
Chief Legal Officer. Group Leadership Team member since 2016. Joined Nokia Siemens Networks in 2013.

Law Degree from University of Palermo (Juris Doctor), Italy.

Executive Vice President and Chief Legal Officer, Nokia 2014–2016. General Counsel, NSN 2013–2014. Tetra Pak Group General Counsel, Tetra Laval Group 2011–2013. Sidel Group General Counsel, Tetra Laval Group 2009–2011. Senior Counsel Commercial Operations and Global Services, GE Oil & Gas 2006–2009. Senior Counsel Europe, Hertz Europe 2005–2006. Senior Counsel Global Services, GE Oil & Gas 2001–2005. Lawyer, Pini Birmingham & Partners 1998–2001. Lawyer, Greco Law Firm 1994–1998.

Member of the Board of Directors of Nordea Bank AB.

Member of the Board of Directors of Alcatel Lucent SA 2016.

Marcus Weldon

b. 1968
Senior Vice President, Corporate Chief Technology Officer and President of Nokia Bell Labs. Group Leadership Team member as of April 1, 2017. Joined Nokia in 2016.

Ph.D (Physical Chemistry) degree, Harvard University, Cambridge, Massachusetts, United States. Bachelor of Science (Computer Science and Chemistry) joint degree, King's College, London, United Kingdom.

Corporate Chief Technology Officer and President of Bell Labs, Alcatel Lucent (then Nokia) 2013–2016. Corporate Chief Technology Officer, Alcatel Lucent 2009–2013. Chief Technology Officer, Broadband Networks & Solutions, Alcatel Lucent 2006–2009. Member of Technical Staff, Bell Labs, Lucent Technologies 1997–2006.

Kristian Pullola



Marc Rouanne



Maria Varsellona



Marcus Weldon



Corporate governance statement continued

Risk management, internal control and internal audit functions at Nokia

Main features of risk management systems

We have a systematic and structured approach to risk management across business operations and processes. Key risks and opportunities are primarily identified against business targets either in business operations or as an integral part of financial planning. Key risks and opportunities are analyzed, managed, monitored and identified as part of business performance management with the support of risk management personnel. Our overall risk management concept is based on managing the key risks that would prevent us from meeting our objectives, rather than solely focusing on eliminating risks. 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 main 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. Risk management covers strategic, operational, financial and hazard risks. Key risks and opportunities are reviewed by the Group Leadership Team and the Board in order to create visibility of business risks as well as to enable prioritization of risk management activities. In addition to the principles defined in the Nokia Enterprise Risk Management Policy, specific risk management implementation is reflected in other key policies.

The Board's Audit Committee is responsible for, among other matters, risk management relating to the financial reporting process and assisting the Board's oversight of the risk management function. Overseeing risk is an integral part of Board deliberations. The Board's role in overseeing risk includes risk analysis and assessment in connection with financial, strategy and business reviews, updates and decision-making proposals. Additionally, certain significant risks are selected as priority risks that are monitored by the Board regularly. We have an Enterprise Risk Management ("ERM") function within the Chief Financial Officer organization. ERM regularly reviews risk evaluations with the internal controls function, and the internal controls function utilized the ERM analysis in planning its priority areas.

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

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

The 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 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 the 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, structured under so-called financial cycles. Financial cycles have been designed to: (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 the 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, the 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 2016, Nokia has followed the procedures as described above and has reported on the progress and assessments to the management and to the Audit Committee of the Board on a quarterly basis. However, our assessment of the operating effectiveness of internal controls as of year end has excluded the business acquired through the Acquisition of Alcatel Lucent, on January 4, 2016 and continue to integrate into the company. This exclusion is in accordance with the SEC's guidance that a recently acquired business may be omitted from the scope of the assessment in the year of acquisition. Refer to "General facts on Nokia—Controls and Procedures".

Description of the organization of the internal audit function

We also have an internal audit function that acts as an independent appraisal function by examining and evaluating 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 involvement of the management. 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. Internal audit aligns to the business regionally and by business and function.

Annually, an internal audit plan is developed with input from the management, including key business risks and external factors. This plan is approved by the Audit Committee of the Board. Audits are completed across the business focused on country level, customer level, IT system implementation, IT security, operations activities or at a Group function level. The results of each audit are reported to the management identifying issues, financial impact, if any, and the correcting actions to be completed. Quarterly, internal audit communicates the progress of the internal audit plan completion, including the results of the closed audits.

Internal audit also works closely with our Ethics and Compliance office to review any financial concerns brought to light from various channels and, where possible, works with Enterprise Risk Management to ensure priority risk areas are reviewed through audits.

In 2016, the internal audit plan was completed and all results of these reviews were reported to the management and to the Audit Committee of the Board.

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 the Nokia Insider Policy which sets out Group-wide rules and practices. The policy is applicable to all Nokia insiders as well as to all our employees.

Our insider administration's responsibilities include internal communications related to insider matters and arrangement of related trainings; organizing and maintaining our insider registers; and overseeing the compliance with the insider rules.

Auditor fees and services

PricewaterhouseCoopers Oy has served as our auditor for each of the fiscal years in the three-year period ended December 31, 2016. The auditor is elected annually by our shareholders at the Annual General Meeting for the fiscal year in question. The Audit Committee of the Board prepares the proposal to the shareholders in respect of the appointment of the auditor based upon its evaluation of the qualifications and independence of the auditor to be proposed for election or re-election on an annual basis.

The following table presents fees by type paid to PricewaterhouseCoopers for the years ended December 31:

EURm	2016	2015
Audit fees(1)	31.3	13.5
Audit-related fees(2)	1.8	3.1
Tax fees(3)	3.4	1.2
All other fees(4)	—	0.6
Total	36.5	18.4

- (1) Audit fees consist of fees incurred for the annual audit of the Group's consolidated financial statements and the statutory financial statements of the Group's subsidiaries.
- (2) Audit-related fees consist of fees billed for assurance and related services that are reasonably related to the performance of the audit or review of the Group's financial statements or that are traditionally performed by the independent auditor, and include consultations concerning financial accounting and reporting standards; advice on tax accounting matters; advice and assistance in connection with local statutory accounting requirements; due diligence related to mergers and acquisitions; employee benefit plan audits and reviews; and audit procedures in connection with investigations in the pre-litigation phase and compliance programs. They also include fees billed for other audit services, which are those services that only the independent auditor can reasonably can provide, and include the provision of comfort letters and consents in connection with statutory and regulatory filings and the review of documents filed with the SEC and other capital markets or local financial reporting regulatory bodies.
- (3) Tax fees include fees billed for: (i) services related to tax compliance including preparation and/or review of tax returns, preparation, review and/or filing of various certificates and forms and consultation regarding tax returns and assistance with revenue authority queries; customs duties reviews and advice; compliance reviews, advice and assistance on other indirect taxes; and transaction cost analysis; (ii) service related to tax audits; (iii) services related to individual compliance (preparation of individual tax returns and registrations for employees (non-executives), assistance with applying visa, residency, work permits and tax status for expatriates); (iv) services related to technical guidance on tax matters; (v) services related to transfer pricing advice and assistance with tax clearances; and (vi) tax consultation and planning (advice on stock-based remuneration, local employer tax laws, social security laws, employment laws and compensation programs and tax implications on short-term international transfers).
- (4) Other fees include fees billed for company establishments; liquidations; forensic accounting, data security, other consulting services and reference materials and services.

Audit Committee pre-approval policies and procedures

The Audit Committee of the Board is responsible, among other matters, for oversight of the external auditor subject to the requirements of Finnish law. The Audit Committee has adopted a policy regarding pre-approval of audit services performed by the external auditors of Nokia Group (including the principal auditor as well as any other auditor of a Nokia Group company) and permissible non-audit services performed by the principal external auditor of the Nokia Group (the "Pre-approval Policy").

Under the Pre-approval Policy, proposed services either: (i) may be pre-approved by the Audit Committee in accordance with certain service categories described in appendices to the Pre-approval Policy ("general pre-approval"); or (ii) require the specific pre-approval of the Audit Committee ("specific pre-approval"). The Audit Committee may delegate either type of pre-approval authority to one or more of its members. The appendices to the Pre-approval Policy set out the audit, audit-related, tax and other services that have received the general pre-approval of the Audit Committee. All other audit, audit-related (including services related to internal controls and significant mergers and acquisitions projects), tax and other services are subject to specific pre-approval by the Audit Committee. All service requests concerning generally pre-approved services will be submitted to an appointed Audit Committee delegate within management, who will determine whether the services are within the services generally pre-approved. The Pre-approval Policy and its appendices are subject to annual review by the Audit Committee.

The Audit Committee establishes budgeted fee levels annually for each of the four categories of audit and non-audit services that are pre-approved under the Pre-approval Policy, namely, audit, audit-related, tax and other services. Requests or applications to provide services that require specific approval by the Audit Committee are submitted to the Audit Committee by both the external auditor and the appointed Audit Committee delegate within management. At each regular meeting of the Audit Committee, the auditor provides a report in order for the Audit Committee to review the services that the auditor is providing, as well as the status and cost of those services.

Compensation

This section sets out our remuneration policies, how they have been implemented within Nokia, and includes our Remuneration Report where we provide disclosure of the compensation of our Board, the President and CEO and aggregated compensation information for the Group Leadership Team. We report information related to executive compensation in accordance with Finnish regulatory requirements and with requirements set forth by the U.S. Securities and Exchange Commission.

Following the Acquisition of Alcatel Lucent, we focused on the following management and personnel-related objectives:

- creation of the new Group Leadership Team;
- alignment of compensation practices and legacy arrangements with Nokia's needs;
- business continuity during integration; and
- culture integration as we combined the two companies, aiming to keep the "best of both" companies.

Separately, we took the opportunity to further enhance our compensation disclosures with the intention of simplifying and further increasing transparency. To achieve this and to make the information more useful for our stakeholders, we separated our report into three sections:

- (1) remuneration governance;
- (2) remuneration policies; and
- (3) Remuneration Report.

In 2016, our Group Leadership Team grew larger following the Acquisition of Alcatel Lucent and we witnessed the impact of our remuneration policies aligning with the performance of the company:

- annual bonuses were down at 40% compared to 2015, reflecting tough market conditions; and
- the Chair of the Board of Directors and the President and CEO reinforced their commitment to Nokia and the share ownership policy by investing directly in Nokia shares.

In 2016, the President and CEO received EUR 7.5 million, which was triggered by the vesting of the remaining 2012 Nokia Networks equity incentive plan awards, representing reward for the transformation of the former Nokia Siemens Networks to what today forms the foundation of our business.

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 process related to their own remuneration and that there is appropriate oversight of any compensation decision. Remuneration of the Board is annually presented to shareholders for approval at the Annual General Meeting and the remuneration of the President and CEO is approved by the Board.

The General Meeting of shareholders

- Shareholders approve the composition of the Board and the director remuneration based on proposals of the Board's Corporate Governance and Nomination Committee, which actively considers and evaluates the appropriate level and structure of director remuneration. The composition of the Board and director remuneration are resolved by a majority vote of the shareholders represented at the General Meeting and determined as of the date of the General Meeting, until the close of the next Annual General Meeting.
- Shareholders authorize the Board to resolve to issue shares, for example, to settle the company's equity-based incentive plans based on the proposal of the Board.

The Board of Directors

- Approves, and the independent members of the Board confirm, the compensation of the President and CEO, upon recommendation of the Personnel Committee;
- Approves, upon recommendation of the Personnel Committee, any long-term incentive compensation and all equity plans, programs or similar arrangements of significance that the company establishes for its employees; and
- Decides on the issuance of shares (under authorization by shareholders) to fulfill the company's obligations under equity plans in respect of vested awards to be settled.

The Personnel Committee

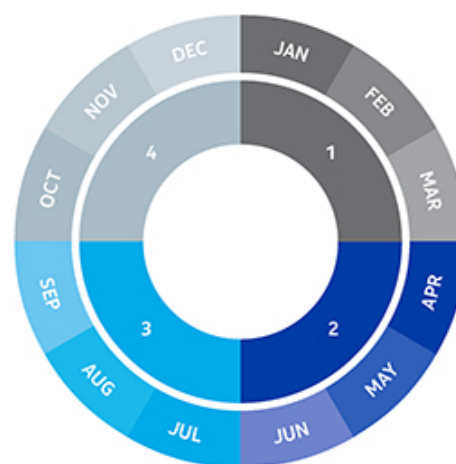
The Personnel Committee assists the Board in discharging its responsibilities relating to all compensation, including equity compensation, of the company's executives and the terms of employment of the executives.

- In respect of the President and CEO, the Committee is accountable to the Board for:
 - reviewing and recommending to the Board the goals and objectives relevant to compensation;
 - evaluating and presenting to the Board the assessment of performance in light of those goals and objectives; and
 - proposing to the Board the total compensation based on this evaluation.

- In respect of the other members of the Group Leadership Team (other than the President and CEO) and the direct reports to the President and CEO in Vice President-level positions and above, the Committee:
 - reviews and approves the goals and objectives relevant to the compensation, upon recommendation of the President and CEO;
 - reviews the results of the evaluation of the performance in relation to the approved goals and objectives. The Committee approves the incentive compensation based on such evaluation;
 - approves and oversees the total compensation recommendations made by the President and CEO; and
 - reviews and approves compensation proposals made by the President and CEO in the event of termination of employment of a member of the Group Leadership Team.
 - The Committee reviews periodically and makes recommendations to the Board regarding any equity programs, plans and other long-term incentive compensation arrangements, or similar arrangements of significance that the company establishes for, or makes available to, its employees, the appropriateness of the allocation of benefits under the plans and the extent to which the plans are meeting their intended objectives.
 - The Committee reviews and resolves, at their discretion, any other significant compensation arrangements applicable to the wider executive population in the Nokia Group.
 - The Committee will report to the Board at least annually on its views as to whether the President and CEO is providing the necessary leadership for the company in the long and short term.
 - The Committee reviews and discusses with management on compensation philosophy, strategy, principles, and management compensation to be included in our Remuneration Report.
 - The Committee reviews annually the company's share ownership policy to determine the appropriateness of the policy against its stated objectives.
 - The Committee has the power, in its sole discretion, to retain compensation consultants having special competence to assist the Personnel Committee in evaluating director and executive compensation.
 - The Committee reviews and approves changes to the company's peer group for the assessment of the competitiveness of our compensation from time to time.
- The committee consults regularly with the President and CEO and the Chief Human Resources Officer though they are not present when their own compensation is reviewed or discussed.

Work of the Personnel Committee

The Personnel Committee convened five (5) times during 2016 with a general theme for each meeting. The discussion and timing of certain remuneration-related elements was unique in 2016, given the specific needs following the Acquisition of Alcatel Lucent and any associated integration-related matters, as required:



- 1 Approvals & reporting
- 2 Philosophy & structure
- 3 Long-term direction & market review
- 4 Planning

January:

- Achievement review
- Budget approval for 2016 Nokia equity program and performance review for 2014 performance share plan
- Employee engagement and organizational health review

March:

- Review of 2015 short-term incentive program achievement and performance
- Target setting for 2016 short-term incentive program
- Review of 2015 annual report

May:

Setting the long-term incentive target

Review of:

- succession;
- diversity;
- policy; and
- annual compensation.

September:

Compensation strategy and philosophy review

Update on:

- market and legal environment; and
 - adviser market practices.
- Talent summit outcomes

November:

Review of:

- framework for short-term incentive program for 2017;
- framework for long-term incentive program for 2017;
- risks;
- annual report for 2016; and
- peer group for 2017.

Compensation continued

The President and CEO

The President and CEO has an active role in the compensation governance and performance management processes for the Group Leadership Team and the wider employee population at Nokia.

The President and CEO is not a member of the Personnel Committee and does not vote at Personnel Committee meetings, nor does he participate in any conversations regarding his own compensation.

Advisers

The Personnel Committee retains the use of Aon, an independent external consultant appointed in 2015, to assist in the review and determination of executive compensation and program design and provide insight into market trends and regulatory developments. The Personnel Committee has reviewed and established that Aon is independent of Nokia and does not have any other business relationships with Nokia.

Authorizations and resolutions of the Board concerning remuneration

Valid authorizations

The Annual General Meeting held on June 16, 2016 resolved to authorize the Board to resolve to issue a maximum of 1 150 million shares through one or more issuances of shares or special rights entitling to shares. The authorization may be used to develop the company's capital structure, diversify the shareholder base, finance or carry out acquisitions or other arrangements, to settle the company's equity-based incentive plans or for other purposes resolved by the Board.

The authorization is effective until December 16, 2017 and the authorization terminated the earlier shareholder authorization for the Board to issue shares and special rights entitling to shares resolved at the Annual General Meeting on May 5, 2015. The authorization did not terminate the authorization granted by the Extraordinary General Meeting held on December 2, 2015 to the Board for issuance of shares in order to implement the Acquisition of Alcatel Lucent.

Board resolutions

On February 1, 2017, the Board approved the Nokia equity program for 2017 and the issuance, without consideration, of a maximum of 9.75 million Nokia shares held by the company in 2017 to settle its commitments to Nokia's equity plan participants. The Nokia equity program for 2017 is explained in more detail below.

Remuneration policy

This section of our statement describes our remuneration policy and the considerations taken into account when setting the policy.

Board of Directors

The objective of the Board's Corporate Governance and Nomination Committee is to ensure that Nokia is able to compete for top-of-class Board competence when determining director remuneration in order to maximize shareholder value. Therefore, it is the practice of the Corporate Governance and Nomination Committee to review and compare the total remuneration levels and their criteria paid in other global companies with net sales, geographical coverage and complexity of business comparable to that of Nokia's. The Corporate Governance and Nomination Committee's aim is to ensure that the company has an efficient Board consisting of international professionals representing a diverse and relevant mix of skills and experience. Nokia believes that a competitive Board remuneration contributes to the achievement of this target.

Director remuneration at Nokia consists of an annual fee and a meeting fee. Director remuneration for the term that began at the Annual General Meeting held on June 16, 2016 and ends at the close of the Annual General Meeting in 2017 consists of the following fees:

Annual fee	EUR
Chair	440 000
Vice Chair	185 000
Member	160 000
Chair of Audit Committee	30 000
Member of Audit Committee	15 000
Chair of Personnel Committee	30 000
Meeting fee/meeting ⁽¹⁾	EUR
Meeting requiring intercontinental travel	5 000
Meeting requiring continental travel	2 000

(1) Paid for a maximum of seven meetings per term. Not paid to the Chair of the Board.

Approximately 40% of the annual fee is paid in Nokia shares purchased from the market or by using treasury shares. According to the company's policy, 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 on the Board (the net amount received after deducting those shares needed to offset any costs relating to the acquisition of the shares, including taxes). The shares shall be purchased from the market on behalf of the directors, or, if treasury shares are used, transferred to the directors, as soon as practicable after the Annual General Meeting. The remainder of the annual fee is payable in cash, most of which is typically used to cover taxes arising from the paid remuneration.

A meeting fee for Board and Committee meetings is paid to all other members of the Board except the Chair of the Board based on travel required between the home location of the member of the Board and the location of a meeting. Only one meeting fee is payable for multiple Board and Committee meetings per eligible travel. The meeting fee is paid for a maximum of seven meetings per term. The meeting fee is paid in cash.

According to the company's policy, non-executive directors do not participate in any of Nokia's equity programs 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.

Group Leadership Team

Our focus when considering policies related to remuneration of the Group Leadership Team and other senior executives is to:

- attract, retain and motivate the right people to lead Nokia;
- drive performance and appropriate behaviors; and
- align the interests of the executives and results of our compensation programs with the interests and returns of our shareholders.

Compensation philosophy, design and strategy

Our compensation programs are designed to attract, incentivize and retain the talent necessary to deliver strong financial results to the ultimate benefit of our shareholders. Rewards are tied to the execution of our strategy by adopting an appropriate mix of fixed and variable compensation to engage and motivate employees in the performance of the business and ensure alignment with shareholder interests.

A single compensation framework is used across the Nokia Group with a varying mix of fixed and variable compensation for each level of responsibility. Higher levels of performance-based compensation and equity compensation are used to reward executives for delivering long-term sustainable growth and creating value for our shareholders.

Compensation structure and target setting

In line with our overall compensation philosophy, our executives are rewarded using a mix of fixed and variable pay.

Targets for the short- and long-term incentive plans are set by the Board. The Board reviews business plans, external analysts' expectations, previous year's performance and the overall macro-economic environment to arrive at suitable targets for the plans. The goal of target-setting is equally to set achievable targets while also ensuring those targets are sufficiently demanding to create shareholder value.

The elements of the compensation structure for the President and CEO and the Group Leadership Team are further detailed below:

Element	Purpose	Philosophy	Operation
Base salary	To attract and retain the best executives with the requisite level of knowledge, skills and experience to lead our businesses and provide a degree of financial certainty and stability to executives.	Fixed cash component targeted at our peer group median. Base salary can vary from the market average due to individual performance, experience, time in position and internal comparison. Base salaries are reviewed annually taking into account market conditions, our financial condition and individual performance.	Changes in base pay are determined based on consideration of a variety of factors, including, for example, the following: <ul style="list-style-type: none"> ■ performance by the member of the Group Leadership Team; ■ changes in the market; ■ market positioning; ■ changes in individual responsibilities; and ■ average employee salary increases across Nokia and in the local market.
Short-term incentives	To incentivize and reward performance against delivery of the annual business plan.	All members of the Group Leadership Team are eligible to receive a short-term incentive, based on a set of pre-determined targets linked to key metrics that drive sustainable business performance and are designed to reward a mix of corporate, business group and individual performance goals.	Achievement is assessed at the end of the year to determine payout. Target short-term incentive awards, when taken together with base salary, are designed to provide a target annual cash compensation comparable to that provided by our peer group.

Compensation continued

Element	Purpose	Philosophy	Operation
Long-term incentives	To reward for delivery of sustainable long-term performance, align the executives' interests with those of shareholders and aid retention.	<p>Long-term incentive awards are intended to provide competitive incentive compensation compared to our peer group when combined with base salary and target short-term incentive.</p> <p>Performance share awards are made annually. They have a two-year performance period and a one-year restriction period. The ultimate value of an award depends on our share price and business performance against predetermined performance criteria.</p> <p>Restricted shares are also used for exceptional purposes related to retention and recruitment. The number of shares vesting is predetermined but the ultimate value will rise or fall in line with movements in our share price.</p> <p>There are also certain legacy equity compensation programs in force as described in "—Legacy equity compensation programs" below.</p>	<p>The value of performance share awards is determined by performance against preset strategic targets of</p> <ul style="list-style-type: none"> ■ net sales; and ■ earnings per share. <p>Targets are set in the context of the Nokia long-term plans which are validated against analyst forecasts ensuring that they are considered both demanding of recipients and motivational to them.</p> <p>The target value of a long-term incentive award depends on the recipient's role in the company and is set in the context of award levels for comparable roles in the wider market.</p>
Benefits & perquisites	To attract, retain and protect executives.	<p>Members of the Group Leadership Team are provided with the same benefits as are made available to employees more broadly in the relevant country, with additional security provisions, as appropriate.</p> <p>Members of the Group Leadership Team may also be provided with certain other benefits from time to time, which are not material in value.</p> <p>Benefits are provided with the intention of maintaining the health and wellness of our executives.</p>	Benefits are determined by country of employment and align with local practices and regulatory requirements.
Relocation & mobility	To support the international mobility of executives and ensure the right people are in the right location to meet business needs.	Members of the Group Leadership Team may be offered support to cover additional costs related to relocation. Mobility policies support the relocation of an executive and their dependents or the reasonable costs of commuting. Benefits are market-specific and are not compensation for performing the role but provided to defray costs or additional burdens of a relocation or residence outside the home country.	
Retirement plans	To allow executives to provide for their retirement with a level of certainty.	Taking into account our global executive population, we provide retirement funding in line with local market and regulatory requirements, typically through defined contribution or locally mandated pension plans. No supplemental pension arrangements are provided in Finland.	
Change of control arrangements	To ensure the continuity of management in connection with a possible change of control event.	Change of control arrangements are offered on a very limited basis only and are based on a double trigger structure, which means that both a specified change of control event and termination of the individual's employment must take place for any change of control-based severance payment to materialize. Refer to "—Termination provisions of the President and CEO" and "—Termination provisions of the Group Leadership Team".	

Payments to departing executives

In the event of a termination of employment, any payable compensation is determined in line with legal advice regarding local legislation, country policies, contractual obligations and the rules of the applicable incentive and benefit plans. Refer to "—Termination provisions of the President and CEO" and "—Termination provisions of the Group Leadership Team".

Recruitment

Our policy on recruitment is to offer a compensation package which is sufficient to attract, retain and motivate individuals with the right skills for the required role. On occasion, we may offer compensation to buy out awards which the candidate held prior to joining Nokia, but which lapsed upon the candidate leaving their previous employer. Due consideration is given to the potential value and timing of such awards, taking into account any conditions attached to the awards and the likely performance against such conditions.

Clawback

Our executives are subject to a clawback policy where any restatement of financial results may result in the reclaiming of amounts previously paid which had been based on numbers which have since been materially restated. Any such reclaimed amount, and the period over which payments can be reclaimed, will take into account the circumstances and duration of any misstatement.

Share ownership requirement

Nokia believes that it is desirable for its executives to own shares in the company 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 and members of the Group Leadership Team are given a period of five years from their appointment in a designated role to achieve the required level of share ownership as follows:

Role	Share ownership requirement
President and CEO	3 x base salary
Member of the Group Leadership Team	2 x base salary

President and CEO

Compensation mix

To align the interests of the President and CEO with those of the company's shareholders, the compensation mix for the President and CEO is heavily geared toward performance-based pay with only 16.5% of core target compensation in 2016 consisting of fixed pay. Additionally, the President and CEO receives incidental benefits and mobility support and pension contributions are made in line with his participation in the statutory Finnish pension system, as regulated by the Finnish Employees' Pension Act (395/2006, as amended) (the "Finnish TyEL").

The total remuneration of the President and CEO is thus dependent on performance, as detailed opposite:

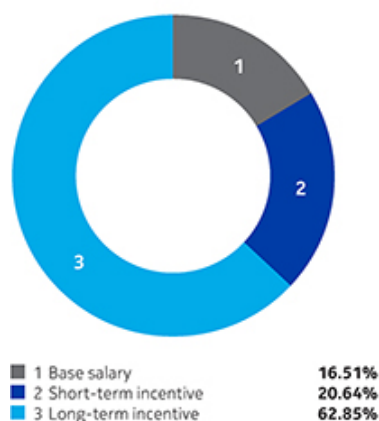
Variable pay of the President and CEO

The variable pay of the President and CEO is determined based on performance against a mix of targets, either short- or long-term in nature, depending on the strategic impact for the business.

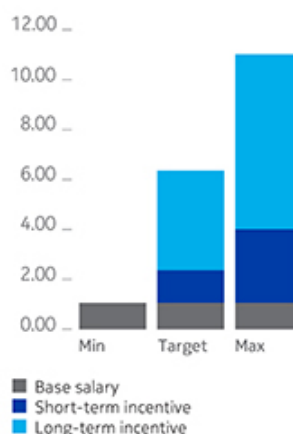
Based on the Board's assessment, the most appropriate metrics for driving sustainable business performance at Nokia are:

- non-IFRS revenue;
- non-IFRS operating profit;
- non-IFRS earnings per share; and
- operating cash flow.

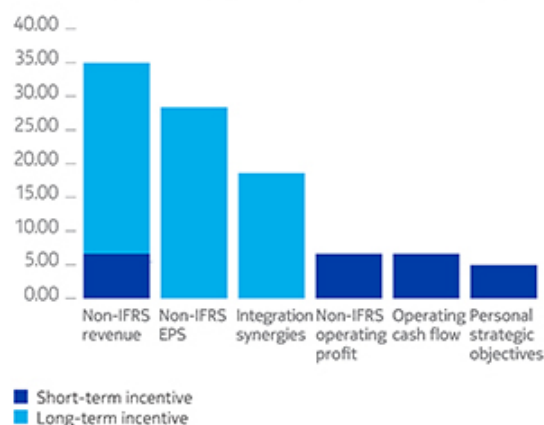
2016 Pay mix



2016 Pay opportunity (EURm)



Incentive opportunity by metric (% of total variable pay)



Non-IFRS measures exclude costs related to the Acquisition of Alcatel Lucent and related integration, goodwill impairment charges, intangible asset amortization and other purchase price fair value adjustments, restructuring and associated charges and certain other items.

Compensation continued

The variable compensation focuses on these measures as well as personal strategic objectives to support the strategic development of Nokia, which is not necessarily measurable or easily measured in purely financial terms.

Short-term incentives of the President and CEO

The short-term incentives for the President and CEO are based on the achievement of key financial targets and other strategic objectives, as defined below. Performance against these defined targets is then multiplied by a business results multiplier, which acts as a funding factor for the incentive plan for most employees, to determine the final payment.

Minimum performance	% of base salary		Measurement criteria
	Target performance	Maximum performance	
0%	125%	281.25%	80% of the incentive is based on performance against the Nokia scorecard: <ul style="list-style-type: none"> ■ non-IFRS revenue (1/3); ■ non-IFRS operating profit (1/3); and ■ operating cash flow (1/3). <p>The final 20% of the incentive is determined based on the achievement of personal strategic objectives set for President and CEO by the Board.</p>

Long-term incentives of the President and CEO

Long-term incentive awards are determined by reference to the market and as a percentage of salary. The President and CEO participates in the same long-term incentive arrangements as other Nokia executives and senior executives. Long-term incentive programs are described under "—Nokia Equity Program".

Pension arrangements of the President and CEO

The President and CEO participates in the statutory Finnish pension system, the Finnish TyEL, which provides for a retirement benefit based on years of service and earnings according to prescribed rules and regulations. No supplemental pension arrangements are provided. Under the Finnish TyEL pension system, base pay, incentives and other taxable fringe benefits are included in the definition of earnings, while gains realized from equity are not. The retirement age for the President and CEO is 65.

Termination provisions of the President and CEO

Termination provisions for the President and CEO's service agreement specify alternatives for termination and associated compensation in accordance with the following table:

Termination by	Reason	Notice	Compensation
Nokia	Cause	None	The President and CEO is entitled to no additional compensation and all unvested equity awards would be forfeited.
Nokia	Reasons other than cause	Up to 18 months	The President and CEO is entitled to a severance payment equaling up to 18 months of compensation (including annual base salary, benefits, and target incentive) and unvested equity awards would be forfeited.
President and CEO	Any reason	Six (6) months	The President and CEO may terminate his service agreement at any time with six months' prior notice. The President and CEO would continue to receive either salary and benefits during the notice period or, at Nokia's discretion, a lump sum of equivalent value. Additionally, the President and CEO would be entitled to any short- or long-term incentives that would normally vest during the notice period. Any unvested equity awards would be forfeited.
President and CEO	Nokia's material breach of the service agreement	Up to 18 months	In the event that the President and CEO terminates his service agreement based on a final arbitration award demonstrating Nokia's material breach of the service agreement, he is entitled to a severance payment equaling to up to 18 months of compensation (including annual base salary, benefits and target incentive). Any unvested equity awards would be forfeited.

The President and CEO's service agreement includes special severance provisions in the event of a termination of employment following a change of control event. Such change of control provisions are based on a double trigger structure, which means that both a change of control event and the termination of the President and CEO's employment within a defined period of time must take place in order for any change of control-based severance payment to become payable. More specifically, if a change of control event has occurred, as defined in the service agreement, and the President and CEO's service with Nokia is terminated either by Nokia or its successor without cause, or by the President and CEO for "good reason", in either case within 18 months from such change of control event, the President and CEO would be entitled to a severance payment equaling up to 18 months of compensation (including annual base salary, benefits, and target incentive) and cash payment (or payments) for the pro-rated value of his outstanding unvested equity awards, restricted shares, performance shares and stock options (if any), payable pursuant to the terms of the service agreement. "Good reason" referred to above includes a material reduction of the President and CEO's compensation and a material reduction of his duties and responsibilities, as defined in the service agreement and as determined by the Board.

The President and CEO is subject to a 12-month non-competition obligation that applies after the termination of the service agreement or the date when he is released from his obligations and responsibilities, whichever occurs earlier.

The Group Leadership Team

Remuneration of the Group Leadership Team

The remuneration of the members of the Group Leadership Team (excluding the President and CEO) consists of base salary, fringe benefits and short- and long-term incentives. The members of the Group Leadership Team participate in the same reward programs, including short- and long-term incentive programs and under the same terms and conditions, as other eligible employees, although the quantum and mix of their compensation vary by role and individual. Short-term incentive plans are based on rewarding the delivery of business performance and certain or all of the following metrics as appropriate in light of the member's role: non-IFRS revenue, non-IFRS operating profit, operating cash flow and defined strategic objectives. Long-term incentive programs are described under "—Nokia Equity Program".

Each member of the Group Leadership Team will have a mix of Nokia level and business group targets based on a mix of revenue, operating profit and operating cash flow depending on their role. Personal strategic objectives of the members of the Group Leadership Team account for up to 20% of their short-term incentive awards.

Pension arrangements of the Group Leadership Team

The members of the Group Leadership Team participate in the local retirement plans applicable to employees in the country of residence. Executives based in Finland participate in the statutory Finnish pension system, as regulated by the Finnish TyEL. Refer to "—Pension arrangements of the President and CEO" above.

Executives based outside Finland participate in arrangements relevant to their location. Retirement plans vary by country and include defined benefit, defined contribution and cash balance plans. The retirement age for the members of Group Leadership Team varies between 60 and 65.

Termination provisions of the Group Leadership Team

In all cases, if an executive is dismissed for cause, no compensation will be payable and no outstanding equity will vest.

In the event of termination by the company for any other reason than cause, where the company pays compensation in lieu of notice period salary, the benefits and target short-term incentive amounts are taken into account.

Additionally, the Board believes that maintaining a stable and effective leadership team is essential for protecting and enhancing the best interests of Nokia and its shareholders. In order to encourage the continued focus, dedication and continuity of the members of the Group Leadership Team to their assigned duties without the distraction that may arise from the possibility of termination of employment as a result of a specified change of control event in Nokia, certain provisions have been made available to them as appropriate when certain change of control events occur.

Certain members of the Group Leadership Team received change of control agreements related to the Acquisition of Alcatel Lucent that expired on January 8, 2017, one year after the transaction completion. These change of control agreements have not been renewed.

Certain members of the Group Leadership Team received change of control agreements at the time of the integration of Nokia and Nokia Siemens Networks which serve as an addendum to their executive agreements and provide for the pro-rata settlement of outstanding equity awards as follows. The change of control agreements are based on a double trigger structure, which means that both a change of control event and the termination of the Group Leadership Team member's employment must take place for any change of control-based severance payment to materialize. More specifically, if a change of control event, as defined in the agreement, has occurred in the company, and the individual's employment with the company is terminated either by Nokia or its successor without cause, or by the individual for "good reason" (e.g., material reduction of duties and responsibilities), in either case within 18 months from such change of control event, the individual will be entitled to his or her notice period compensation (including base salary, benefits and target incentive) and cash payment (or payments) for the pro-rated value of the individual's outstanding unvested equity, including restricted shares and performance shares, payable pursuant to the terms of the agreement. The Board has full discretion to terminate or amend the change of control agreements at any time.

No new change of control clauses have been included in the service agreements of executives who joined the Group Leadership Team since January 1, 2016.

Compensation continued

Nokia Equity Program

A key component of Group Leadership Team members' and other executives' compensation is equity-based long-term incentives with the purpose of aligning the participants' interests with those of shareholders. The amount of equity as a percentage of the compensation package increases with the seniority of the role. As in previous years, the Nokia equity program 2017 includes the following equity instruments:

	Performance shares	Restricted shares	Employee share purchase plan
Eligible employees	Grade based eligibility	Grade-based eligibility	Employees in participating countries
Purpose	Annual long-term incentive awards, to reward delivery of sustainable long-term performance, align with the interests of shareholders and aid retention of key employees	Exceptional recruitment and retention	Encourage share ownership within the Nokia employee population, increasing engagement and sense of ownership in the company
Vesting schedule	Two-year performance period based on financial targets and one-year restriction period	Vest equally in three tranches on the 1st, 2nd and 3rd anniversary of grant	Matching shares vest at the end of the 12-month savings period

Performance Shares

In accordance with the previous years' practice, the primary equity instruments granted to executive employees and other eligible employees are performance shares. The performance shares represent a commitment by Nokia to deliver Nokia shares to employees at a future point in time, subject to our fulfillment of pre-defined performance criteria. Performance shares vest to participants after three years following a two-year performance period based on financial targets and a subsequent one-year restriction period.

The Board has continued with the practice of the two-year performance period which gives greater predictability in a fast changing environment and supports greater alignment of underlying achievement with payments. Targets are set in the context of the Board's view of the future business plans for Nokia, investor expectations and analyst forecasts and the Board will continue to review the suitability of the two-year performance period for future years. The table below illustrates the performance criteria of the performance share plans for 2014 through to 2017.

Performance criteria (non-IFRS)(1)	2017	2016	2015	2014
Annual net sales Nokia Group(2)	Yes	Yes	Yes	Yes
Average annual earnings per share, Nokia Group (diluted)	Yes	Yes	Yes	Yes
Minimum settlement at below threshold performance(3)	—	25%	25%	25%

- (1) Non-IFRS measures exclude costs related to the Acquisition of Alcatel Lucent and related integration, goodwill impairment charges, intangible asset amortization and other purchase price fair value adjustments, restructuring and associated charges and certain other items.
- (2) The performance criteria of the performance share plan 2015 were restated in May 2016 to reflect the new organizational structure and scope of the Nokia Group. The restatement adjusts the net sales and earnings per share performance targets to remove the impact related to the Sale of the HERE Business for the fourth quarter of 2015 following the sale of HERE in 2015 and restates the 2016 targets based on the combined Group following the Acquisition of Alcatel Lucent in January 2016. Net sales metric is weighted equally each year, instead of calculating average over the two-year performance period due to significant difference between the metrics for Nokia in 2015 and the combined Group in 2016. For other years' performance share plans, the criterion has been average annual net sales for Nokia Group during the performance period.
- (3) In 2014, a minimum payout level was introduced to reinforce the retentive impact of the plan by giving some certainty to remaining employees during the transformation of Nokia following the Sale of the D&S Business and integration of the Nokia Networks business. The 2017 plan removes the minimum payout of 25% of the grant amount for executive employees. Employees who are not executives at the time the awards are granted to them will continue to benefit from a minimum payout of 25% with the intention of this continuing to provide a retention effect.

The 2017 performance share plan has a two-year performance period (2017-2018) and a subsequent one-year restriction period. The shares will vest on January 1, 2020. The performance criteria for the 2017 performance share plan are:

Performance criteria (non-IFRS)(1)	Weighting	Threshold performance (EUR)	Maximum performance (EUR)	Potential range of settlement(2)
Nokia average annual net sales January 1, 2017—December 31, 2018	50%	22 842 million	26 280 million	Threshold number up to maximum level (4 x Threshold number)
Nokia average annual earnings per share (diluted) January 1, 2017—December 31, 2018	50%	0.26	0.38	Threshold number up to maximum level (4 x Threshold number)

- (1) Non-IFRS measures exclude costs related to the Acquisition of Alcatel Lucent and related integration, goodwill impairment charges, intangible asset amortization and other purchase price fair value adjustments, restructuring and associated charges and certain other items.
- (2) The minimum payout of 25% of the grant amount will be payable to all participants except executives only in the event that the calculated payout (based on Nokia's performance against the performance criteria) is beneath 25% achievement against the performance criteria.

Based on a resolution by the Board, the maximum number of performance shares that can be granted under the performance share plan for 2017 is 37 million. The maximum payout can be 200%. Accordingly, achievement of the maximum performance against all the performance criteria would result in the vesting and an aggregate maximum payout of 74 million Nokia shares. Achievements beyond the maximum performance level will not cause any further shares to vest. For employees who are not executives at the time the awards are granted to them, 25% of the performance shares granted in 2017 will settle after the restriction period, regardless of the satisfaction of the applicable performance criteria. In case the applicable performance criteria are not satisfied, employees who are executives on the grant date for their 2017 performance shares will not receive any settlement.

Until the Nokia shares are delivered, the participants will not have any shareholder rights, such as voting or dividend rights associated with these performance shares.

Restricted Share Plan

Restricted shares are used on a selective basis to ensure retention and recruitment of individuals deemed critical to our future success. The restricted shares vest in three equal tranches on the first, second and the third anniversary of the award subject to continued employment with Nokia.

In 2017, restricted shares will be granted on a limited basis for exceptional purposes related to retention and recruitment, primarily in the United States, to ensure we are able to retain and recruit vital talent for the future success of Nokia.

Until the Nokia shares are delivered, the participants will not have any shareholder rights, such as voting or dividend rights, associated with the restricted shares.

Share in Success

Under our employee share purchase plan "Share in Success", eligible employees can elect to make monthly contributions from their salary to purchase Nokia shares. The contribution per employee cannot exceed EUR 1 800 per year. The share purchases are made at market value on predetermined dates on a monthly basis during a 12-month savings period. Nokia intends to deliver one matching share for every two purchased shares the employee still holds at the end of the Plan cycle. Participation in the plan is voluntary for all employees in countries where the plan is offered.

Monitoring the performance of our equity plans

Each year Nokia monitors the performance of its equity plans against the targets for the plan, total shareholder return and the impact that the plans have on total compensation compared to market peers. For further discussion on the performance of the plans refer to "—Remuneration Report" below.

Legacy equity programs

Stock Options

The granting of stock options ceased at the end of 2013; however, awards granted under the 2011 stock option plan remain in force. Under the plan, each stock option entitles the holder to subscribe for one new Nokia share. The stock options are non-transferable and may be exercised for shares only. The vesting schedule of the 2011 stock option plan is as follows:

Plan	Vesting schedule
2011 stock option plan	50% on third anniversary of grant
	50% on fourth anniversary of grant
	Term is approximately six years
The final subscription periods end on December 27, 2019	

Shares will be eligible for dividends in respect of the financial year in which the share subscription takes place. Other shareholder rights will commence on the date on which the subscribed shares are entered in the trade register. The stock option grants are generally forfeited if the employment relationship is terminated with Nokia.

2012 Nokia Networks Equity Incentive Plan

The 2012 Nokia Networks equity incentive plan was established by the board of Nokia Siemens Networks prior to Nokia's acquisition of full ownership of the Nokia Networks business. Under this plan options over Nokia Solutions and Networks B.V. shares were granted to Mr. Suri and approximately 65 other Nokia Networks employees.

At that time, both Nokia and Siemens were considering a potential exit from Nokia Siemens Networks. The plan had two objectives:

- (1) to increase the value of Nokia Networks; and
- (2) to create an exit option for its parent companies.

With the significantly improved performance of Nokia Networks, the first objective has been met. The second objective has not occurred and, given the change in our strategy, the likelihood of a sale or an initial public offering ("IPO") has diminished.

The exercise price of the options is based on a Nokia Networks share value on grant, as determined for the purposes of the 2012 Nokia Networks equity incentive plan. The options will be cash-settled at exercise, unless an IPO has taken place, at which point they would be converted into equity-settled options.

The targets of the plan were set at a demanding level and payments from the plan represent the outstanding achievement of the Networks team. The actual payments under the 2012 Nokia Networks equity incentive plan were determined based on the value of the Nokia Networks business. In 2015, 30% of the options became exercisable and the remaining 70% became exercisable in 2016.

Alcatel Lucent liquidity agreements

In 2016, Nokia and Alcatel Lucent entered into liquidity agreements with beneficiaries of the 2015 Alcatel Lucent performance share plan. Pursuant to the agreements, the 2015 Alcatel Lucent performance shares (as well as other unvested performance share plans, where the employee elected to enter into a liquidity agreement rather than accelerate their equity), would be exchanged for Nokia shares, or for the cash equivalent of the market value of such Nokia shares, shortly after expiration of the vesting period. The exchange ratio would be aligned with the exchange ratio of Nokia's exchange offer for all outstanding Alcatel Lucent securities, subject to certain adjustments in the event of financial transactions by either Nokia or Alcatel Lucent. Accordingly, these agreements apply to any member of the Group Leadership Team who has entered into such liquidity agreement.

Compensation continued

Remuneration Report

The Remuneration Report provides information on the remuneration earned between January 1, 2016 and December 31, 2016. We provide disclosure of the compensation of our Board, the President and CEO and aggregated compensation information for the Group Leadership Team.

Board of Directors

In 2016, the aggregate amount of compensation paid to the members of the Board for their services on the Board and its committees equaled EUR 2 050 902.

In accordance with the resolutions passed at the Extraordinary General Meeting on December 2, 2015, and following the successful public exchange offer for all Alcatel Lucent securities, we confirmed the new composition of the Board on January 8, 2016. The newly elected members of the Board were Louis R. Hughes, Jean C. Monty and Olivier Piou. Elizabeth Doherty, who was a member of the Board until the successful closing of the exchange offer for all Alcatel Lucent securities, stepped down from the Board.

Additionally, the Extraordinary General Meeting resolved that the newly elected members of the Board would receive the same annual remuneration as was paid to the members of the Board elected at the Annual General Meeting on May 5, 2015, prorated for the new Board members' time in service from January 8, 2016 until the closing of the Annual General Meeting held on June 16, 2016.

The Annual General Meeting held on June 16, 2016 resolved to elect nine members to the Board. The following members of the Board were re-elected for a term ending at the close of the Annual General Meeting in 2017: Vivek Badrinath, Bruce Brown, Louis R. Hughes, Jean C. Monty, Elizabeth Nelson, Olivier Piou, Risto Siilasmaa and Kari Stadigh. Carla Smits-Nusteling was elected as new member of the Board for the same term. For director remuneration resolved by the Annual General Meeting for the current term refer to "Remuneration Policy—Board of Directors" above.

On July 29, 2016, Nokia announced that Vivek Badrinath had stepped down from the Board.

The following table outlines the total annual compensation paid in 2016 to the members of the Board for their services, as resolved by shareholders at the Extraordinary General Meeting on December 2, 2015 and the Annual General Meeting on June 16, 2016. The table does not include the meeting fees as resolved by the Annual General Meeting in June 2016. The meeting fees for applicable Board and Committee meetings held in 2016 will be paid in 2017. For details of Nokia shares held by the members of the Board, refer to "—Share ownership—Share ownership of the Board of Directors" below.

Compensation paid in 2016(1):

	EUR
Risto Siilasmaa, Chair	440 000
Olivier Piou, Vice Chair(2)	255 082
Vivek Badrinath(3)	175 000
Bruce Brown(4)	190 000
Elizabeth Doherty(5)	—
Louis R. Hughes(6)	240 410
Simon Jiang(7)	—
Jouko Karvinen(8)	—
Jean C. Monty(9)	225 410
Elizabeth Nelson(10)	190 000
Carla Smits-Nusteling(11)	175 000
Kari Stadigh(12)	160 000
Total	2 050 902

- (1) Approximately 40% of each Board member's annual fee was paid in Nokia shares purchased from the market and the remaining amount of approximately 60% was paid in cash. The meeting fees as resolved by the Annual General Meeting in 2016 will be paid in cash in 2017 and are not included in the table.
- (2) Consists of EUR 70 082 for services as the Vice Chair of the Board from January 8, 2016 until the Annual General Meeting in 2016 and EUR 185 000 for services as the Vice Chair of the Board from the Annual General Meeting in 2016.
- (3) Consists of EUR 160 000 for services as a member of the Board and EUR 15 000 for services as a member of the Audit Committee. However, Mr. Badrinath stepped down from the Board on July 29, 2016 and has returned to the company the compensation paid to him.
- (4) Consists of EUR 160 000 for services as a member of the Board and EUR 30 000 for services as the Chair of the Personnel Committee.
- (5) Served as a member of the Audit Committee and a member of the Board until January 8, 2016. She was not paid any compensation during fiscal year 2016, but received compensation for the term until the close of the Annual General Meeting in June 2016 in the fiscal year 2015.
- (6) Consists of EUR 60 738 for services as a member of the Board and EUR 4 672 for services as a member of the Audit Committee from January 8, 2016 until the Annual General Meeting in 2016 and of EUR 160 000 for services as a member of the Board and EUR 15 000 for services as a member of the Audit Committee from the Annual General Meeting in 2016.
- (7) Served as a member of the Board until the Annual General Meeting in 2016. He was not paid any compensation during fiscal year 2016, but received compensation for the term until the close of the Annual General Meeting in 2016 in the fiscal year 2015.
- (8) Served as the Vice Chair of the Board until January 8, 2016, the Chair of the Audit Committee until April 1, 2016 and as a member of the Board until the Annual General Meeting in 2016. He was not paid any compensation during fiscal year 2016, but received compensation for the term until the close of the Annual General Meeting in 2016 in the fiscal year 2015.
- (9) Consists of EUR 60 738 for services as a member of the Board and EUR 4 672 for services as a member of the Audit Committee from January 8, 2016 until the Annual General Meeting in June 2016 and of EUR 160 000 for services as a member of the Board from the Annual General Meeting in 2016.
- (10) Consists of EUR 160 000 for services as a member of the Board and EUR 30 000 for services as the Chair of the Audit Committee.
- (11) Consists of EUR 160 000 for services as a member of the Board and EUR 15 000 for services as a member of the Audit Committee.
- (12) Consists of EUR 160 000 for services as a member of the Board.

The President and CEO

The following table shows the remuneration received by the President and CEO in 2016 and 2015. The long-term incentive payments reflect actual payments in the respective years attributable to the vesting of the 2012 Nokia Networks equity incentive plan.

EUR	2016	2015
Salary	1 049 044	1 000 000
Short-term incentive(1)	780 357	1 922 125
Equity-based incentive(2)		
From role as Nokia President and CEO	—	—
From role as NSN CEO	7 556 598	3 238 542
Other compensation(3)	122 157	145 658
Total	9 508 156	6 306 325

(1) Short-term incentives represent amounts earned in respect of the financial year, but that are paid in April of the following year.

(2) Amounts represent the value of the 2012 Nokia Networks equity incentive plan. Refer to "—2012 Nokia Networks Equity Incentive Plan" above.

(3) Other compensation includes compensation for housing equaling EUR 41 312 (2015: EUR 47 950); travel assistance equaling EUR 33 482 (2015: EUR 48 510); Tax services equaling EUR 19 260 (2015: EUR 17 834) and other benefits including mobile phone, driver and supplemental medical and disability insurance equaling EUR 28 103 (2015: EUR 31 363).

Pursuant to Finnish legislation, Nokia is required to make contributions to the Finnish TyEL pension arrangements in respect of the President and CEO. Such payments can be characterized as defined contribution payments. In 2016, payments to the Finnish state pension system equaled EUR 469 737 (EUR 491 641 in 2015).

Short-term incentive

In line with Nokia's performance in 2016, the short-term incentive of the President and CEO equaled EUR 780 357, or 63.5%, of the target award, reflecting the challenging market environment.

Long-term incentive

In 2016, the President and CEO was eligible to exercise the final options under the 2012 Nokia Networks equity incentive plan. The plan was established in 2012 to incentivize the turnaround of the former Nokia Siemens Networks business. The value of the options to the President and CEO reflects the dramatic success of the turnaround plan and is borne out by the fact that, today, the core of Nokia's business is networks-related.

In 2016, the President and CEO was awarded the following equity awards under the Nokia equity program:

Award	Units awarded	Grant date fair value (EUR)	Grant date	Vesting date
Performance shares(1)	642 114	3 005 736	July 1, 2016	January 1, 2019
Restricted shares (with individual integration-related performance conditions)(2)	208 700	986 942	August 16, 2016	October 1, 2017, 2018 and 2019

(1) The 2016 performance share plan has a two-year performance period based on financial targets and a one-year restriction period. Minimum payout under the plan, even if threshold performance is not achieved, is 25% of the awarded amount. The maximum payout would be 200% subject to maximum performance against all the performance criteria. Vesting is subject to continued employment.

(2) In 2016, Nokia and certain senior executives of the company entered into agreements based on which the vesting of restricted shares granted to them is subject to fulfillment of predetermined performance conditions related to the successful integration of Nokia and Alcatel Lucent. Performance is currently estimated at 100% payout and the restricted shares are expected to vest in three equal tranches on October 1, 2017, 2018 and 2019. Vesting is subject to continued employment.

The award of restricted shares represents a special long-term incentive to ensure that the President and CEO (and other senior executives) is motivated to deliver the synergies of the Acquisition of Alcatel Lucent and share alongside shareholders in the benefits that they are expected to deliver.

Share ownership

Our share ownership policy requires that the President and CEO holds a minimum of three times his base salary in Nokia shares in order to ensure alignment with shareholder interests over the long term. This requirement has been met. In 2016, the President and CEO acquired 519 757 Nokia shares. In addition, the 2014 performance share plan vested on January 1, 2017 and consequently 742 297 Nokia shares were delivered to the President and CEO on February 8, 2017.

	Units	Value (EUR)
Beneficially owned shares as of December 31, 2016(1)	549 480	2 522 113
Vested shares under the 2014 performance share plan delivered on February 8, 2017(2)	742 297	3 377 451
Unvested shares under other Nokia equity plans(3)	1 351 961	6 205 500
Total	2 643 738	12 105 064

(1) The value is based on the closing price of Nokia share of EUR 4.59 on Nasdaq Helsinki on December 30, 2016.

(2) The value and number of units represent fair market value of a Nokia share of EUR 4.55 on Nasdaq Helsinki on February 8, 2017 and the net number of shares delivered after the applicable taxes was withheld from the number of shares that vested to the President and CEO.

(3) The number of units represents the number of unvested awards at December 31, 2016 including the payout factor of the 2015 performance share plan and excluding the 2014 performance share plan that vested on January 1, 2017. The value is based on the closing price of a Nokia share of EUR 4.59 on Nasdaq Helsinki on December 30, 2016. Vesting is subject to continued employment.

Compensation continued

Group Leadership Team

Following the Acquisition of Alcatel Lucent, the Group Leadership Team has consisted of 13 persons split between Finland, other European countries and the United States. The compensation structure for the Group Leadership Team was set in the Nokia framework honoring inherited agreements where appropriate.

Name	Position in 2016	Appointment date
Rajeev Suri	President and CEO	May 1, 2014
Samih Elhage	President of Mobile Networks	May 1, 2014
Federico Guillén	President of Fixed Networks	January 8, 2016
Basil Alwan	President of IP/Optical Networks	January 8, 2016
Bhaskar Gorti	President of Applications & Analytics	January 8, 2016
Ramzi Haidamus ⁽¹⁾	President of Nokia Technologies	September 3, 2014
Timo Ihamuotila ⁽²⁾	Chief Financial Officer	September 1, 2011
Hans-Jürgen Bill	Chief Human Resources Officer	January 8, 2016
Kathrin Buvac	Chief Strategy Officer	January 8, 2016
Ashish Chowdhary	Chief Customer Operations Officer	January 8, 2016
Barry French	Chief Marketing Officer	January 8, 2016
Marc Rouanne	Chief Innovation & Operating Officer	January 8, 2016
Maria Varsellona	Chief Legal Officer	January 8, 2016

(1) Ramzi Haidamus was a member of the Group Leadership Team until September 30, 2016.

(2) Timo Ihamuotila was a member of the Group Leadership Team until December 31, 2016. Kristian Pullola was appointed as Chief Financial Officer and a member of the Group Leadership Team as of January 1, 2017. The Group Leadership Team currently consists of twelve (12) members, however, as announced on March 17, 2017, the Group Leadership Team will grow to fourteen (14) members from April 1, 2017.

Remuneration of the Group Leadership Team (excluding the President and CEO) in 2015 and 2016, in the aggregate, was as follows:

	2016 EURm ⁽¹⁾	2015 EURm ⁽¹⁾
Salary, short-term incentives and other compensation ⁽²⁾	22.7	6.3
Equity-based incentives ⁽³⁾	25.5	3.7
Total	48.2	10.0

(1) In 2016, the Group Leadership Team consisted of up to twelve members (excluding the President and CEO), whereas in 2015 the Group Leadership Team consisted of up to four members (excluding the President and CEO).

(2) Short-term incentives represent amounts earned in respect of 2016 performance. Other compensation includes mobility related payments, local benefits and certain pension costs.

(3) Amounts represent the value of the 2012 Nokia Networks equity incentive plan or other equity awards vesting or stock options exercised during 2016 and share awards from Alcatel Lucent where appropriate.

In 2016, the Group Leadership Team was awarded the following equity awards under the Nokia equity program:

Award	Units awarded	Grant date fair value (EUR)	Grant date	Vesting date
Performance shares ⁽¹⁾	1 571 478	7 356 200	July 1, and August 16, 2016	January 1, 2019
Restricted shares (with individual integration-related performance conditions) ⁽²⁾	1 015 100	4 800 408	August 16, 2016	October 1, 2017, 2018 and 2019

(1) The 2016 performance share plan has a two-year performance period based on financial targets and a one-year restriction period. Minimum payout under the plan, even if threshold performance is not achieved, is 25% of the awarded amount. The maximum payout would be 200% subject to maximum performance against all the performance criteria. Vesting is subject to continued employment.

(2) Nokia and certain senior executives of the company entered into agreements based on which the vesting of restricted shares granted to them is subject to fulfillment of predetermined performance conditions related to the successful integration of Nokia and Alcatel Lucent. Performance is currently estimated at 100% payout and the restricted shares are expected to vest in three equal tranches on October 1, 2017, 2018 and 2019. Vesting is subject to continued employment.

Review of our incentive plans

Short-term Incentives

Short-term incentive targets and achievements for the members of the Group Leadership Team (excluding the President and CEO) were based on a mix of revenue, operating profit and cash flow targets. These targets are measured either at a Nokia Group level or, alternatively, a mix of Nokia Group and business group level for business group presidents. Payout levels for 2016 represent the challenging business environment in which Nokia has been operating with median payout at 70% of target.

Long-term incentives

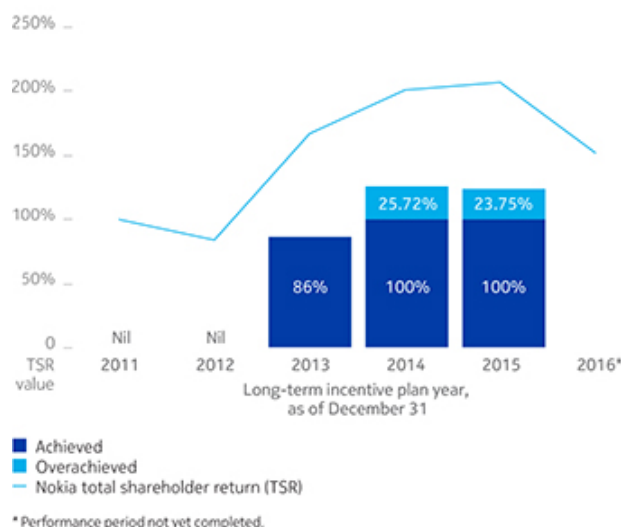
We have actively introduced a rolling review of compensation against key metrics such as total shareholder return and share price to validate the effectiveness of our equity plans.

The 2014 performance share plan vested on January 1, 2017 with 125.72% of the target award vesting based on the achievement against the net sales and earnings per share targets during the performance period.

The 2015 performance share plan will vest on January 1, 2018 with 123.75% of the target award vesting based on the achievement against the net sales and earnings per share targets during the performance period.

While short-term performance in 2016 was affected by a challenging market and the integration of Alcatel Lucent, the performance under long-term incentive plans represents the significant turnaround of Nokia from 2013 when it acquired the remainder of Nokia Siemens Networks and the continued focus on delivering profit despite challenging market conditions. The performance of the business in 2014, 2015 and 2016 against targets set in the context of analyst forecasts shows fair rewards for a business well positioned for the longer term.

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



Total shareholder return Nokia vs Stoxx 50 vs S&P 500 (January 1, 2013 to December 31, 2016)



Compensation continued

Pay for performance

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

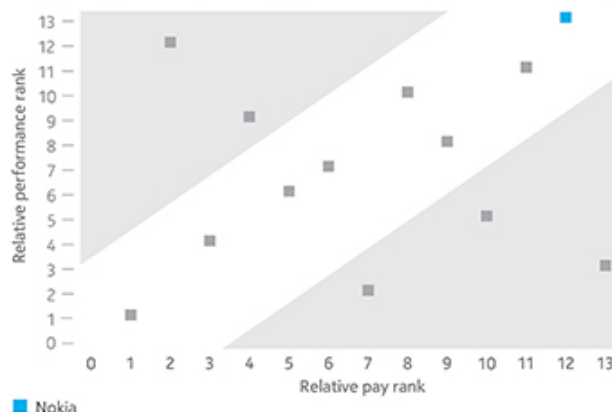
We compare ourselves to a group of peer companies. We rank our performance against the peer group based on total shareholder return and total compensation paid, to ensure that the targets and amounts paid are for superior performance and reflect a balanced view. Data are only publicly available for our peer group for financial years to December 31, 2015. Based on the comparison, the performance of Nokia over the preceding three years, as measured by total shareholder return, was ranked first, whilst the compensation paid out to the President and CEO (as opposed to awarded) was ranked second. This shows a strong pay-for-performance alignment at Nokia, and this is illustrated in the chart opposite.

Our Peers

In looking for suitable comparators, we have considered ourselves a European technology company and looked at businesses of similar size, global scale and complexity, such as:

ABB	Infineon
ASML	Kone
BT	Phillips
Deutsche Telekom	Rolls-Royce
Ericsson	SAP
Hexagon	Vodafone

Relative degree of alignment pay vs total shareholder return ranking



Share ownership

Share ownership of the Board of Directors

As of December 31, 2016, the members of our Board held a total of 4 754 602 shares and ADSs in Nokia, which represented approximately 0.08% of our outstanding shares and total voting rights excluding shares held by Nokia Group.

The following table sets forth the number of shares and ADSs held by the members of the Board at December 31, 2016:

Name ⁽¹⁾	Shares ⁽¹⁾	ADSs ⁽¹⁾
Risto Siilasmaa	1 282 708	—
Olivier Piou	252 760	—
Bruce Brown	—	99 961
Louis R. Hughes	41 827	—
Jean C. Monty	2 767 557	—
Elizabeth Nelson	—	45 868
Carla Smits-Nusteling	13 921	—
Kari Stadigh	250 000	—

(1) The number of shares or ADSs includes shares and ADSs received as director compensation as well as shares and ADSs acquired through other means. Stock options or other equity awards that are deemed as being beneficially owned under the applicable SEC rules are not included. For the number of shares or ADSs received as director compensation, refer to Note 35, Related party transactions, of our consolidated financial statements included in this annual report on Form 20-F.

Share ownership of the President and CEO and the Nokia Group Leadership Team

The following table sets forth the share ownership of the President and CEO, and the other members of the Group Leadership Team in office as of December 31, 2016. The share ownership of all members of the Group Leadership Team, including the President and CEO, was 1 091 181 Nokia shares, which represented 0.02% of the outstanding shares and total voting rights excluding shares held by Nokia Group at December 31, 2016. The share ownership requirement of the President and CEO as well as the members of the Group Leadership Team is described under “—share ownership requirement” above.

Name	Position in 2016	Beneficially owned shares number
Rajeev Suri	President and Chief Executive Officer	549 480
Samih Elhage	President of Mobile Networks	—
Federico Guillén	President of Fixed Networks	13 498
Basil Alwan	President of IP/Optical Networks	163 071
Bhaskar Gorti	President of Applications & Analytics	133
Timo Ihamuotila	Chief Financial Officer	353 120
Hans-Jürgen Bill	Chief Human Resources Officer	10 000
Kathrin Buvac	Chief Strategy Officer	—
Ashish Chowdhary	Chief Customer Operations Officer	1 746
Barry French	Chief Marketing Officer	133
Marc Rouanne	Chief Innovation & Operating Officer	—
Maria Varsellona	Chief Legal Officer	—

Unvested equity awards held by the Nokia Group Leadership Team as of December 31, 2016

The following table sets forth the potential ownership interest through the holding of equity-based incentives of the Group Leadership Team, including the President and CEO:

	Shares receivable through stock options	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⁾	320 000	4 912 265	9 824 530	1 250 480
% of the outstanding shares ⁽²⁾	0.01%	0.09%	0.17%	0.02%
% of the total outstanding equity incentives (per instrument) ⁽³⁾	19.99%	11.31%	11.31%	20.95%

(1) Includes the 12 members of the Group Leadership Team in office as of December 31, 2016. The number of units held under awards made before June 30, 2016 was adjusted to reflect the impact of the special dividend paid in 2016.

(2) The percentages are calculated in relation to the outstanding number of shares and total voting rights of Nokia as of December 31, 2016, excluding shares held by 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. The number of units outstanding under awards made before June 30, 2016 reflects the impact of the special dividend paid in 2016.

(4) At maximum performance, under the performance share plans outstanding as of December 31, 2016, the payout would be 200% and the table reflects this potential maximum payout. The restriction period for the performance share plan 2014 and the performance period for the performance share plan 2015 ended on December 31, 2016 and Nokia's performance against the performance criteria set out in the plan rules, was above the threshold performance level for both plans. The settlement to the participants under the performance share 2014 plan took place in February 2017 and the settlement for the performance share 2015 plan is expected to take place in the beginning of 2018 after the restriction period ends.

General facts on Nokia





General facts on Nokia

Contents

[Our history](#)
[Memorandum and Articles of Association](#)
[Selected financial data](#)
[Shares and shareholders](#)
[Depository payments in 2016](#)
[Related party transactions](#)
[Production of infrastructure equipment and products](#)
[Key ratios](#)
[Controls and procedures](#)
[Government regulation](#)
[Sales in U.S.-sanctioned countries](#)
[Taxation](#)

General facts on Nokia

Our history

Few companies have Nokia's storied capacity for transforming, developing new technologies and adapting to shifts in market conditions. From its beginning in 1865 as a single paper mill operation, Nokia has found and nurtured success in several sectors over the years, including cable, paper products, rubber boots and tires, mobile devices and telecommunications infrastructure equipment.

Nokia's sector-by-sector success over the years has mirrored its geographical rise: from a Finnish-focused company until the 1980s with a growing Nordic and European presence; to a genuine European company in the early 1990s; and on to a truly global company from the mid-1990s onward. With the Acquisition of Alcatel Lucent, we further deepen and widen our global reach.

Nokia has been producing telecommunications equipment since the 1880s—almost since telephony began.

A storied past

When Finnish engineer Fredrik Idestam set up his initial wood pulp mill in Southern Finland in 1865, he took the first step in laying the foundation of Nokia's capacity for innovating and finding opportunity. Sensing growing pulp product demand, Idestam opened a second mill a short time later on the Nokianvirta River, inspiring him to name his company Nokia AB.

Idestam's sense of endeavor would continue to prevail in the different phases Nokia would take.

In the 1960s, Nokia became a conglomerate, comprised of rubber, cable, forestry, electronics and power generation businesses, resulting from the merger of Idestam's Nokia AB, and Finnish Cable Works Ltd, a phone and power cable producer founded in 1912, and other businesses.

Transformation anew

It was not long before transformation would call again.

Deregulation of the European telecommunications industries in the 1980s triggered new thinking and fresh business models.

In 1982, Nokia introduced both the first fully-digital local telephone exchange in Europe and the world's first car phone for the Nordic Mobile Telephone analog standard. The breakthrough of GSM (global system for mobile communications) in the 1980s introduced more efficient use of radio frequencies and higher-quality sound. The first GSM call was made with a Nokia phone over the Nokia-built network of a Finnish operator called Radiolinja in 1991.

It was around this time that Nokia made the strategic decision to make telecommunications and mobile phones our core business. Our other businesses, including aluminum, cable, chemicals, paper, rubber, power plant, and television businesses were subsequently divested.

By 1998, Nokia was the world leader in mobile phones, a position it enjoyed for more than a decade.

And still, the business and technology worlds would continue to evolve, as would Nokia.

A shifting industry

In 2007, Nokia combined its telecoms infrastructure operations with those of Siemens to create the NSN joint venture. We later bought Siemens' stake in NSN in 2013 as the business was emerging from a successful strategy shift and the reality of what Nokia calls a Programmable World of connected devices, sensors and people was starting to take shape.

In 2011, we joined with Microsoft to strengthen our position in the highly competitive smartphone market, which in 2014 resulted in the closing of the Sale of the D&S Business. Nokia emerged from the transaction with a firm financial footing and three strong businesses—Nokia Networks, HERE and Nokia Technologies—focused on connecting the things and people of the Programmable World.

Nokia's transformation was not complete. Our former HERE digital mapping and location services business, an arena we entered in 2006, had been a key pillar of Nokia's operational performance. However, following a strategic review of the business by the Board in light of plans to acquire Alcatel Lucent, Nokia decided to sell its HERE Business.

Acquisition of Alcatel Lucent and beyond

The Acquisition of Alcatel Lucent positions Nokia as an innovation leader in next-generation technology and services.

Our reputation as an innovation powerhouse has been bolstered by the addition of Bell Labs, now known as Nokia Bell Labs. It joins a future-focused business backed by tens of thousands of engineers and thousands of patent families, a reflection of Nokia's innovation pedigree which has produced a huge array of benefits for consumers, business and society as a whole.

The acquisition helps us shape the connectivity and digitization revolution before us—the Programmable World—in which billions of people, devices, and sensors are connected in a way that opens up a world of possibilities. These can make our planet safer, cleaner, healthier, more sustainable, more efficient and more productive.

Nokia's long history is marked by change and reinvention. We have always been excited by where technology will lead us as we seek to enable the human possibilities of a connected world. We will continue to innovate, reimagining how technology works for us discreetly while blending into, and enriching, our daily lives.

Memorandum and Articles of Association

Registration

Nokia is organized under the laws of the Republic of Finland and registered under the 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 IoT, human health and well-being, multimedia, 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.

Director's 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 remuneration payable to the Board members is paid in Nokia shares purchased from the market, 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 fiscal 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 the 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 whose shares are registered in the company's register of shareholders in the name of a nominee, may vote with their shares provided that they arrange to have their name entered in the temporary register of shareholders for the general meeting.

The record date is the eighth business day preceding the meeting. To be entered in the temporary register of shareholders for the general meeting, a holder of ADSs must provide the Depositary, or have his broker or other custodian provide the Depositary, on or before the voting deadline, as defined in the proxy material issued by the Depositary, a proxy with the following information: the name, address, and social security number or another corresponding personal identification number of the holder of the ADSs, the number of shares to be voted by the holder of the ADSs and the voting instructions. The register of shareholders as of the record date of each general meeting is public until the end of the respective meeting. Other nominee registered shareholders can attend and vote at the general meetings by instructing their broker or other custodian to register the shareholder in Nokia's temporary register of shareholders and give the voting instructions in accordance with the broker's or custodian's instructions.

By completing and returning the form of proxy provided by the Depositary, a holder of ADSs also authorizes the Depositary to give a notice to us, required by our Articles of Association, of the holder's intention to attend the general meeting.

Each of our shares confers equal rights to share in the distribution of the company's funds. For a description of dividend rights attaching to our shares, refer to "—Shares and shareholders". Dividend entitlement lapses after three years if a dividend remains unclaimed for that period, in which case the unclaimed dividend will be retained by Nokia.

Under Finnish law, the rights of shareholders are related to the shares as set forth in law and our Articles of Association. Finnish law or our Articles of Association do not set limitations on the rights to own Nokia securities, including the rights of foreign shareholders to hold or exercise voting rights in the said securities. Amendment of the Articles of Association requires a decision of the general meeting, supported by two-thirds of the votes cast and two-thirds of the shares represented at the meeting.

General facts on Nokia continued

Disclosure of shareholder ownership or voting power

According to the Finnish Securities Market Act, which entered into effect on January 1, 2013, a shareholder shall disclose their 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 outstanding. 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, at a price generally based on the historical weighted average trading price of the shares. 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. 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. This price can be deviated from for a specific reason. 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. This price can be deviated from for a specific reason.

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 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 their possession. However, a general meeting of shareholders may vote, by a majority of two-thirds of the votes cast and two-thirds of the shares represented at the meeting, to waive this pre-emptive right provided that, from the company's perspective, weighty financial grounds exist.

Under the Finnish Act on the Monitoring of Foreign Corporate Acquisitions (2012/172 as amended), a notification to the Ministry of Employment and the Economy is required for a non-resident of Finland, directly or indirectly, when acquiring one-tenth or more of the voting power or corresponding factual influence in a company. The Ministry of Employment and the Economy has to confirm the acquisition unless the acquisition would jeopardize important national interests, in which case the matter is referred to the Council of State. If the company in question is operating in the defense sector, an approval by the Ministry of Employment and the Economy is required before the acquisition is made. These requirements are not applicable if, for instance, the voting power is acquired in a share issue that is proportional to the holder's ownership of the shares. Moreover, the requirements do not apply to residents of countries in the European Economic Area or EFTA countries.

Selected financial data

Five-year consolidated financial information

The financial data set forth below as of and for the years ended December 31, 2016 and 2015 and for each of the three years ended December 31, 2016, 2015 and 2014 has been derived from our audited consolidated financial statements included in this annual report on Form 20-F. Financial data as of December 31, 2014, 2013, and 2012 and for each of the years in the two years ended December 31, 2013 and 2012 have been reclassified to reflect HERE as Discontinued operations.

The financial data as of December 31, 2016 and 2015 and for each of the three years ended December 31, 2016, 2015 and 2014 should be read in conjunction with, and are qualified in their entirety by reference to, our audited consolidated financial statements.

We acquired Alcatel Lucent in January 2016; consequently the acquisition is reflected in the financial data presented as of and for the year ended December 31, 2016 only. Refer to Note 5, Acquisitions, of our consolidated financial statements included in this annual report on Form 20-F. For information on material trends affecting our business and results of operations, refer to "Operating and financial review and prospects—Principal industry trends affecting operations" above.

The audited consolidated financial statements from which the selected consolidated financial data set forth below have been derived were prepared in accordance with IFRS. For information on our critical accounting policies refer to Note 3, Use of estimates and critical accounting judgments, of our consolidated financial statements included in this annual report on Form 20-F.

	2016	2016	2015	2014	2013	2012
	(USD)(1)	(EUR)				
For the year ended December 31	(in millions, except per share data)					
From the consolidated income statement(2)						
Net sales from Continuing operations	26 044	23 614	12 499	11 762	11 795	14 298
Operating (loss)/profit from Continuing operations	(1 213)	(1 100)	1 697	1 414	672	(520)
(Loss)/profit before tax from Continuing operations	(1 510)	(1 369)	1 540	999	399	(877)
(Loss)/profit for the year from Continuing operations	(1 006)	(912)	1 194	2 718	128	(1 291)
(Loss)/profit from Discontinued operations	(17)	(15)	1 274	758	(867)	(2 495)
(Loss)/profit for the year	(1 022)	(927)	2 468	3 476	(739)	(3 786)
(Loss)/profit from Continuing operations attributable to equity holders of the parent	(828)	(751)	1 192	2 710	273	(580)
(Loss)/profit attributable to equity holders of the parent	(845)	(766)	2 466	3 462	(615)	(3 105)
Earnings per share (for profit/(loss) attributable to equity holders of the parent)						
Basic earnings per share, EUR						
From Continuing operations	(0.14)	(0.13)	0.32	0.73	0.07	(0.16)
From the (loss)/profit for the year	(0.14)	(0.13)	0.67	0.94	(0.17)	(0.84)
Diluted earnings per share, EUR						
From Continuing operations	(0.14)	(0.13)	0.31	0.67	0.07	(0.16)
From the (loss)/profit for the year	(0.14)	(0.13)	0.63	0.85	(0.17)	(0.84)
Cash dividends per share, EUR(2)	0.19	0.17	0.26	0.14	0.37	–
Average number of shares (millions of shares)						
Basic	5 732	5 732	3 671	3 699	3 712	3 711
Diluted						
Continuing operations	5 741	5 741	3 949	4 132	3 733	3 711
Group	5 741	5 741	3 949	4 132	3 712	3 711

(1) In 2016, average rate of USD per EUR 1.1029 has been used to translate the consolidated income statement items.

(2) The Board proposes a cash dividend of EUR 0.17 per share for 2016, subject to shareholders' approval at the Annual General Meeting convening on May 23, 2017.

General facts on Nokia continued

	2016 (USD)(1)	2016	2015	2014 (EUR)	2013	2012
For the year ended December 31				(in millions)		
From the consolidated statement of financial position						
Non-current assets	25 517	24 182	5 102	7 339	6 048	9 323
Cash and other liquid assets(2)	9 841	9 326	9 849	7 715	8 971	9 909
Other current assets	11 975	11 349	5 975	6 009	4 825	10 752
Assets held for sale and assets of disposal groups classified as held for sale	46	44	—	—	5 347	—
Total assets	47 380	44 901	20 926	21 063	25 191	29 984
Capital and reserves attributable to equity holders of the parent	21 203	20 094	10 503	8 611	6 468	7 937
Non-controlling interests	930	881	21	58	192	1 302
Long-term interest-bearing liabilities	3 859	3 657	2 023	2 576	3 286	5 087
Other non-current liabilities	8 087	7 664	1 988	2 530	1 067	2 002
Current borrowings	390	370	51	116	3 376	462
Other current liabilities	12 910	12 235	6 340	7 172	6 074	13 194
Liabilities of disposal groups classified as held for sale	—	—	—	—	4 728	—
Total shareholders' equity and liabilities	47 380	44 901	20 926	21 063	25 191	29 984
Net cash(3)	5 592	5 299	7 775	5 023	2 309	4 360
Share capital	260	246	246	246	246	246

(1) In 2016, end of period rate of USD per EUR 1.0552 has been used to translate the consolidated statement of financial position items.

(2) Cash and other liquid assets consist of the following line items from our consolidated statement of financial position: cash and cash equivalents, available-for-sale investments, liquid assets and investments at fair value through profit and loss, liquid assets. Net interest-bearing liabilities consist of borrowings due within one year and long-term interest-bearing liabilities, less cash and other liquid assets.

(3) Total cash and other liquid assets less long-term interest-bearing liabilities (including the current portion thereof) less short-term borrowings.

Exchange rate data

Our business and results of operations are, from time to time, affected by changes in exchange rates, particularly between the euro, our reporting currency, and other currencies such as the U.S. dollar, the Chinese yuan, the Japanese yen and the Korean won. The following table sets forth information concerning the noon buying rate for the years 2012 to 2016 and for each of the months in the six-month period ended February 28, 2017, expressed in U.S. dollars per euro. The average rate for a year means the average of the exchange rates on the last day of each month during a year. The average rate for a month means the average of the daily exchange rates during that month.

For the year ended December 31 (unless otherwise specified)	End of period rate	Average rate (USD per EUR)	Highest rate	Lowest rate
2012	1.3186	1.2909	1.3463	1.2062
2013	1.3779	1.3303	1.3816	1.2774
2014	1.2101	1.3210	1.3927	1.2101
2015	1.0859	1.1032	1.2015	1.0524
2016	1.0552	1.1029	1.1516	1.0375
September 30, 2016	1.1238	1.1218	1.1271	1.1158
October 31, 2016	1.0962	1.1014	1.1212	1.0866
November 30, 2016	1.0578	1.0792	1.1121	1.0560
December 30, 2016	1.0552	1.0545	1.0758	1.0375
January 31, 2017	1.0794	1.0635	1.0794	1.0416
February 28, 2017	1.0618	1.0650	1.0802	1.0551
March 1, 2017 to March 10, 2017	1.0667	1.0575	1.0667	1.0514

On March 10, 2017, the noon buying rate was USD 1.0667 per EUR 1.00.

Shares and shareholders

Shares and share capital

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

As of December 31, 2016, the share capital of Nokia Corporation equaled EUR 245 896 461.96 and the total number of shares issued was 5 836 055 012. As of December 31, 2016, the total number of shares included 115 551 878 shares owned by Group companies representing approximately 2.0% of the total number of shares and the total voting rights.

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

As of December 31	2016	2015	2014	2013	2012
Share capital, EURm	246	246	246	246	246
Shares, (000s)	5 836 055	3 992 864	3 745 044	3 744 994	3 744 956
Shares owned by the Group, (000s)	115 552	53 669	96 901	32 568	33 971
Number of shares excluding shares owned by the Group, (000s)	5 720 503	3 939 195	3 648 143	3 712 427	3 710 985
Average number of shares excluding shares owned by the Group during the year, (000s), basic	5 732 371	3 670 934	3 698 723	3 712 079	3 710 845
Average number of shares excluding shares owned by the Group during the year, (000s), diluted	5 741 117	3 949 312	4 131 602	3 712 079	3 710 845
Number of registered shareholders(1)	237 700	209 509	216 830	225 587	250 799

(1) Each account operator is included in the figure as only one registered shareholder.

Key ratios

As of December 31, Continuing operations	2016	2015	2014	2013	2012
Earnings per share for (loss)/profit attributable to equity holders of the parent					
Earnings per share, basic, EUR	(0.13)	0.32	0.73	0.07	(0.16)
Earnings per share, diluted, EUR	(0.13)	0.31	0.67	0.07	(0.16)
P/E ratio, basic(1)	neg.	20.6	8.99	83.14	neg.
Dividend per share, EUR(2)	0.17	0.26	0.14	0.37	–
Total dividends paid, EURm(2)(3)	972	1 501	511	1 374	–
Payout ratio, basic(2)	neg.	0.81	0.19	5.29	neg.
Dividend yield, %(2)	3.70	3.94	2.13	6.36	–
Shareholders' equity per share, EUR(4)	3.51	2.67	2.36	1.74	2.14
Market capitalization, EURm(4)	26 257	25 999	23 932	21 606	10 873

(1) Based on Nokia closing share price at year-end.

(2) The Board proposes a cash dividend of EUR 0.17 per share for 2016, subject to shareholders' approval at the Annual General Meeting convening on May 23, 2017.

(3) For 2016, the figure represents the maximum amount to be distributed as dividends, based on the number of shares as of December 31, 2016, excluding the number of shares owned by the Group companies. Comparative figures represent the total actual amounts paid.

(4) Excludes shares owned by Group companies.

Reductions of share capital and number of shares

Type of reduction	Year	Number of shares 000s	Amount of reduction of the share capital EURm	Amount of reduction of the restricted capital EURm	Amount of reduction of the retained earnings EURm
Cancellation of shares	2012	–	–	–	–
Cancellation of shares	2013	–	–	–	–
Cancellation of shares	2014	–	–	–	–
Cancellation of shares	2015	66 904	–	–	–
Cancellation of shares	2016	–	–	–	–

General facts on Nokia continued

Share turnover

	2016	2015	2014	2013	2012
Share turnover (000s)(1)	9 604 722	8 490 823	9 278 853	16 748 295	19 995 211
Total number of shares (000s)	5 836 055	3 992 823	3 745 044	3 744 956	3 744 956
% of total number of shares	165	213	248	447	534

(1) Source: Nasdaq Helsinki, the NYSE composite tape and Euronext Paris (since November 2015).

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.

Nasdaq Helsinki share prices(1)

EUR	2016	2015	2014	2013	2012
Low/high	3.66/6.99	4.91/7.87	4.89/6.97	2.30/6.03	1.33/4.46
Average(2)	5.07	6.53	5.99	3.57	2.62
Year-end	4.59	6.60	6.56	5.82	2.93

(1) Source: Nasdaq Helsinki.

(2) Total turnover divided by total volume.

Euronext Paris share prices(1)

EUR	2016	2015	2014	2013	2012
Low/high	3.66/6.99	6.29/7.15	—	—	—
Average(2)	4.98	6.66	—	—	—
Year-end	4.57	6.59	—	—	—

(1) Source: Euronext Paris.

(2) Total turnover divided by total volume.

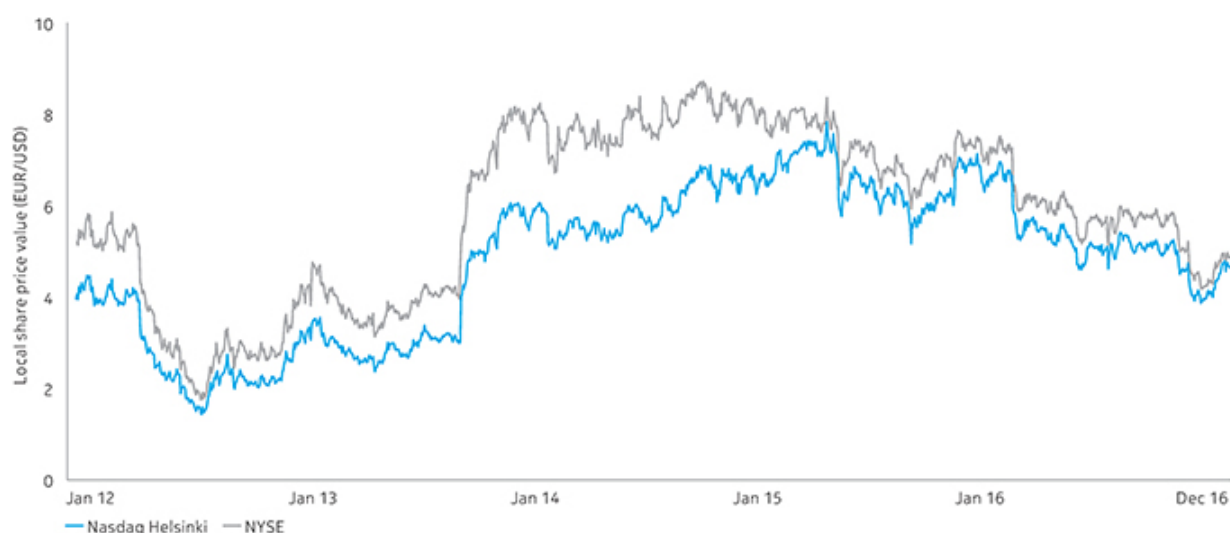
NYSE share prices (ADS)(1)

USD	2016	2015	2014	2013	2012
Low/high	4.04/7.55	5.71/8.37	6.64/8.73	3.02/8.18	1.63/5.87
Average(2)	5.64	7.28	7.79	4.82	3.41
Year-end	4.81	7.02	7.86	8.11	3.95

(1) Source: The NYSE composite tape.

(2) Total turnover divided by total volume.

Nokia share prices on Nasdaq Helsinki (EUR) and the NYSE (USD) 2012–2016



Stock option exercises 2012–2016

Year	Stock option category	Subscription price EUR	Number of new shares 000s	Date of payment	Net proceeds EURm	New share capital EURm
2012	Nokia Stock Option Plan 2007 2Q	18.39	0	2012	0.00	—
	Nokia Stock Option Plan 2007 3Q	21.86	0	2012	0.00	—
	Nokia Stock Option Plan 2007 4Q	27.53	0	2012	0.00	—
	Nokia Stock Option Plan 2008 1Q	24.15	0	2012	0.00	—
	Nokia Stock Option Plan 2008 2Q	19.16	0	2012	0.00	—
	Nokia Stock Option Plan 2008 3Q	17.80	0	2012	0.00	—
	Nokia Stock Option Plan 2008 4Q	12.43	0	2012	0.00	—
	Nokia Stock Option Plan 2009 1Q	9.82	0	2012	0.00	—
	Nokia Stock Option Plan 2009 2Q	11.18	0	2012	0.00	—
	Nokia Stock Option Plan 2009 3Q	9.28	0	2012	0.00	—
	Nokia Stock Option Plan 2009 4Q	8.76	0	2012	0.00	—
	Nokia Stock Option Plan 2010 1Q	10.11	0	2012	0.00	—
	Nokia Stock Option Plan 2010 2Q	8.86	0	2012	0.00	—
	Nokia Stock Option Plan 2010 3Q	7.29	0	2012	0.00	—
	Nokia Stock Option Plan 2010 4Q	7.59	0	2012	0.00	—
	Total		0		0.00	
2013	Nokia Stock Option Plan 2008 1Q	24.15	0	2013	0.00	—
	Nokia Stock Option Plan 2008 2Q	19.16	0	2013	0.00	—
	Nokia Stock Option Plan 2008 3Q	17.80	0	2013	0.00	—
	Nokia Stock Option Plan 2008 4Q	12.43	0	2013	0.00	—
	Nokia Stock Option Plan 2009 1Q	9.82	0	2013	0.00	—
	Nokia Stock Option Plan 2009 2Q	11.18	0	2013	0.00	—
	Nokia Stock Option Plan 2009 3Q	9.28	0	2013	0.00	—
	Nokia Stock Option Plan 2009 4Q	8.76	0	2013	0.00	—
	Nokia Stock Option Plan 2010 1Q	10.11	0	2013	0.00	—
	Nokia Stock Option Plan 2010 2Q	8.86	0	2013	0.00	—
	Nokia Stock Option Plan 2010 3Q	7.29	0	2013	0.00	—
	Nokia Stock Option Plan 2010 4Q	7.59	0	2013	0.00	—
	Total		0		0.00	
2014	Nokia Stock Option Plan 2009 1Q	9.56	0	2014	0.00	—
	Nokia Stock Option Plan 2009 2Q	10.92	0	2014	0.00	—
	Nokia Stock Option Plan 2009 3Q	9.02	0	2014	0.00	—
	Nokia Stock Option Plan 2009 4Q	8.50	0	2014	0.00	—
	Nokia Stock Option Plan 2010 1Q	9.85	0	2014	0.00	—
	Nokia Stock Option Plan 2010 2Q	8.60	0	2014	0.00	—
	Nokia Stock Option Plan 2010 3Q	7.03	0	2014	0.00	—
	Nokia Stock Option Plan 2010 4Q	7.33	0	2014	0.00	—
	Nokia Stock Option Plan 2011 2Q	5.76	50	2014	0.29	—
	Nokia Stock Option Plan 2011 3Q	3.50	0	2014	0.00	—
	Total		50		0.29	

General facts on Nokia continued

Year	Stock option category	Subscription price EUR	Number of new shares 000s	Date of payment	Net proceeds EURm	New share capital EURm
2015	Nokia Stock Option Plan 2010 1Q	9.85	0	2015	0.00	—
	Nokia Stock Option Plan 2010 2Q	8.60	0	2015	0.00	—
	Nokia Stock Option Plan 2010 3Q	7.03	0	2015	0.00	—
	Nokia Stock Option Plan 2010 4Q	7.33	0	2015	0.00	—
	Nokia Stock Option Plan 2011 2Q	5.76	442	2015	2.55	—
	Nokia Stock Option Plan 2011 3Q	3.50	212	2015	0.74	—
	Nokia Stock Option Plan 2011 4Q	4.58	90	2015	0.41	—
	Nokia Stock Option Plan 2012 1Q	3.58	0	2015	0.00	—
	Nokia Stock Option Plan 2012 2Q	2.18	213	2015	0.47	—
	Nokia Stock Option Plan 2012 3Q	1.92	285	2015	0.55	—
Total			1 242		4.72	
2016	Nokia Stock Option Plan 2011 2Q	5.66	104	2016	0.60	—
	Nokia Stock Option Plan 2011 3Q	3.40	0	2016	0.00	—
	Nokia Stock Option Plan 2011 4Q	4.48	0	2016	0.00	—
	Nokia Stock Option Plan 2012 1Q	3.48	0	2016	0.00	—
	Nokia Stock Option Plan 2012 2Q	2.08	240	2016	0.51	—
	Nokia Stock Option Plan 2012 3Q	1.82	308	2016	0.57	—
	Nokia Stock Option Plan 2012 4Q	1.76	10	2016	0.02	—
	Nokia Stock Option Plan 2013 1Q	2.58	0	2016	0.00	—
	Nokia Stock Option Plan 2013 2Q	2.35	166	2016	0.39	—
	Nokia Stock Option Plan 2013 3Q	2.72	5	2016	0.01	—
Total			833		2.10	

Shareholders

As of December 31, 2016, shareholders registered in Finland represented 17.46% and shareholders registered in the name of a nominee represented 82.54% of the total number of shares of Nokia Corporation. The number of directly registered shareholders was 237 700 as of December 31, 2016. Each account operator (14) is included in this figure as only one registered shareholder.

Largest shareholders registered in Finland as of December 31, 2016⁽¹⁾

Shareholder	Total number of shares 000s	% of all shares	% of all voting rights
Varma Mutual Pension Insurance Company	62 722	1.07	1.09
Schweizerische Nationalbank	38 498	0.66	0.67
The State Pension Fund	38 000	0.65	0.66
Ilmarinen Mutual Pension Insurance Company	29 820	0.51	0.52
Elo Mutual Pension Insurance Company	18 499	0.32	0.32
Folketrygdfondet	18 389	0.32	0.32
Lival Oy Ab	14 626	0.25	0.26
Svenska Litteratursällskapet i Finland rf	14 394	0.25	0.25
Nordea Finland Fund	13 263	0.23	0.23
Keva (Local Government Pensions Institution)	10 849	0.19	0.19

(1) Excluding nominee registered shares and shares owned by Nokia Corporation. Nokia Corporation owned 104 093 217 shares as of December 31, 2016.

Breakdown of share ownership as of December 31, 2016⁽¹⁾

By number of shares owned	Number of shareholders	% of shareholders	Total number of shares	% of all shares
1–100	47 964	20.18	2 774 317	0.05
101–1 000	115 933	48.77	53 091 780	0.91
1 001–10 000	65 028	27.36	203 634 514	3.49
10 001–100 000	8 267	3.48	200 858 393	3.44
100 001–500 000	388	0.16	77 417 339	1.33
500 001–1 000 000	43	0.02	29 450 835	0.51
1 000 001–5 000 000	53	0.02	126 843 622	2.17
Over 5 000 000	24	0.01	5 141 984 212	88.11
Total	237 700	100.00	5 836 055 012	100.00

⁽¹⁾ The breakdown covers only shareholders registered in Finland, and each account operator (14) 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	82.54
Finnish shareholders	17.46
Total	100.00

By shareholder category (Finnish shareholders)	% of shares
Corporations	3.50
Households	7.67
Financial and insurance institutions	2.09
Non-profit organizations	1.08
Governmental bodies (incl. pension insurance companies)	3.12
Total	17.46

As of December 31, 2016, a total of 617 976 509 ADSs (equivalent to the same number of shares or approximately 10.59% of the total outstanding shares) were outstanding and held of record by 139 658 registered holders in the United States. We are aware that many ADSs are held of record by brokers and other nominees, and accordingly the above number of holders is not necessarily representative of the actual number of persons who are beneficial holders of ADSs or the number of ADSs beneficially held by such persons. Based on information available from Automatic Data Processing Inc., the number of beneficial owners of ADSs as of December 31, 2016 was 391 848.

Based on information known to us as of March 22, 2017, as of November 26, 2015 Blackrock, Inc. beneficially owned 287 009 903 Nokia shares or convertible bonds combined, which at that time corresponded to approximately 7.19% of the total number of shares and voting rights of Nokia. All of our shareholders have the same voting rights, refer to “Operating and financial review and prospects—Shares and share capital”.

To our knowledge, Nokia is not directly or indirectly owned or controlled by any other corporation or any government, and there are no arrangements that may result in a change of control of Nokia.

General facts on Nokia continued

Shares and stock options owned by the members of the Board and the Nokia Group Leadership Team

As of December 31, 2016, members of the Board and the Group Leadership Team owned an aggregate of 3 142 338 shares which represented approximately 0.05% of the aggregate number of shares and voting rights. They also owned stock options which, if exercised in full, including both exercisable and non-exercisable stock options, would be exercisable for an additional 310 000 shares representing approximately 0.005% of the total number of shares and voting rights as of December 31, 2016.

Authorizations

Authorizations to issue shares and special rights entitling to shares

At the Annual General Meeting held on May 5, 2015, Nokia shareholders authorized the Board to issue a maximum of 730 million shares through one or more issues of shares or special rights entitling to shares. The Board was authorized to issue either new shares or shares held by the company. The authorization included the right for the Board to resolve on all the terms and conditions of such share and special rights issuances, including issuance in deviation from the shareholders' pre-emptive rights. The authorization may be used to develop the company's capital structure, diversify the shareholder base, finance or carry out acquisitions or other arrangements, settle the company's equity-based incentive plans, or for other purposes resolved by the Board. The authorization that would have been effective until November 5, 2016 was terminated by a resolution of Annual General Meeting on June 16, 2016.

At the Extraordinary General Meeting held on December 2, 2015, Nokia shareholders authorized the Board to issue, in deviation from the shareholders' pre-emptive right, a maximum of 2 100 million shares through one or more share issues. The authorization includes the right for the Board to resolve on all the terms and conditions of such share issuances. The authorization may be used to issue Nokia shares to the holders of Alcatel Lucent shares, ADSs and convertible bonds as well as to beneficiaries of Alcatel Lucent employee equity compensation arrangements for the purpose of implementing the transaction with Alcatel Lucent, including the consummation of the public exchange offers for all outstanding Alcatel Lucent securities made to Alcatel Lucent shareholders as well as other transactions contemplated by the memorandum of understanding between Nokia and Alcatel Lucent, and/or otherwise to effect the combination of Nokia and Alcatel Lucent. The authorization is effective until December 2, 2020. On November 2, 2016 Nokia reached 100% ownership of Alcatel Lucent.

At the Annual General Meeting held on June 16, 2016, Nokia shareholders authorized the Board to issue a maximum of 1 150 million 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 the company. The authorization includes the right for the Board to resolve on all the terms and conditions of such share and special rights issuances, including issuance in deviation from the shareholders' pre-emptive rights. The authorization may be used to develop the company's capital structure, diversify the shareholder base, finance or carry out acquisitions or other arrangements, settle the company's equity-based incentive plans, or for other purposes resolved by the Board. The authorization is effective until December 16, 2017.

As of December 31, 2016, the Board had no other authorizations to issue shares, convertible bonds, warrants or stock options.

Authorization to repurchase shares

At the Annual General Meeting held on May 5, 2015, Nokia shareholders authorized the Board to repurchase a maximum of 365 million shares. The amount corresponded to less than 10% of the total number of the company's shares. The shares may be repurchased in order to optimize the capital structure of the company, in order to finance or carry out acquisitions or other arrangements, to settle the company's equity-based incentive plans or to be transferred for other purposes. The authorization that would have been effective until November 5, 2016 was terminated by a resolution of the Annual General Meeting on June 16, 2016.

At the Annual General Meeting held on June 16, 2016, Nokia shareholders authorized the Board to repurchase a maximum of 575 million Nokia shares. The amount corresponds to less than 10% of the total number of the company's shares. The shares may be repurchased in order to optimize the capital structure of the company, to finance or carry out acquisitions or other arrangements, to settle the company's equity-based incentive plans, or to be transferred for other purposes. The authorization is effective until December 16, 2017.

On November 15, 2016, in line with its previously announced EUR 7 billion capital structure optimization program, the Board resolved to commence a share repurchase program under the authorization granted by the Nokia Annual General Meeting on June 16, 2016. The Board resolved to repurchase a maximum of 575 million Nokia shares up to an equivalent of EUR 1 billion.

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 ⁽¹⁾	Maximum value of shares that may yet be purchased under the plans or programs, EUR
January	—	—	—	—
February	—	—	—	—
March	—	—	—	—
April	—	—	—	—
May	—	—	—	—
June	—	—	—	—
July	—	—	—	—
August	—	—	—	—
September	—	—	—	—
October	—	—	—	—
November ⁽²⁾	20 880 143	3.95	20 880 143	917 499 980
December	33 416 039	4.43	33 416 039	769 389 815
Total	54 296 182	4.25	54 296 182	769 389 815

(1) On October 29, 2015 Nokia announced a capital structure optimization program including share repurchases. In line with the program, a EUR 1 billion share purchase program was announced on November 15, 2016.

(2) Repurchases commenced on November 16, 2016.

General facts on Nokia continued

Offer and listing details

Our capital consists of shares traded on Nasdaq Helsinki under the symbol "NOKIA" and Euronext Paris under the symbol "NOKIA". Our ADSs, each representing one of our shares, are traded on the NYSE under the symbol "NOK". The ADSs are evidenced by American Depositary Receipts ("ADRs") issued by Citibank, N.A., as the Depositary under the Amended and Restated Deposit Agreement dated as of March 28, 2000 (as amended), among Nokia, Citibank, N.A. and registered holders from time to time of ADRs, as amended on February 6, 2008.

The table below sets forth, for the periods indicated, the reported high and low quoted prices for our shares on Nasdaq Helsinki and Euronext Paris, and the high and low quoted prices for the ADSs, as reported on the NYSE composite tape.

	Nasdaq Helsinki price per share		New York Stock Exchange price per ADS		Euronext Paris price per share ⁽¹⁾	
	High	Low	High	Low	High	Low
	EUR		USD		EUR	
2012	4.46	1.33	5.87	1.63	—	—
2013	6.03	2.30	8.18	3.02	—	—
2014	6.97	4.89	8.73	6.64	—	—
2015						
First Quarter	7.38	6.33	8.14	7.40	—	—
Second Quarter	7.87	5.71	8.37	6.30	—	—
Third Quarter	6.55	4.91	7.10	5.71	—	—
Fourth Quarter	7.11	5.92	7.63	6.53	7.15	6.29
Full year	7.87	4.91	8.37	5.71	7.15	6.29
2016						
First Quarter	6.99	5.06	7.55	5.74	6.99	5.06
Second Quarter	5.58	4.48	6.31	5.01	5.57	4.17
Third Quarter	5.38	4.56	5.99	5.22	5.38	4.56
Fourth Quarter	5.20	3.66	5.83	4.04	5.20	3.66
Full year	6.99	3.66	7.55	4.04	6.99	3.66
Most recent six months						
September 2016	5.20	4.78	5.89	5.40	5.20	4.78
October 2016	5.20	4.06	5.83	4.47	5.20	4.06
November 2016	4.17	3.66	4.53	4.04	4.17	3.66
December 2016	4.74	3.93	4.99	4.20	4.75	3.93
January 2017	4.67	4.15	4.99	4.50	4.71	4.15
February 2017	4.92	4.12	5.21	4.52	4.92	4.13
March 10, 2017 ⁽²⁾	5.01	4.82	5.38	5.16	5.00	4.82

(1) Nokia's listing and trading on Euronext Paris commenced on November 19, 2015.

(2) For the period until March 10, 2017.

Depositary 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 ⁽²⁾
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 ⁽²⁾
Distribution of securities other than ADSs or rights to purchase additional ADSs	Up to 5 cents per ADS ⁽¹⁾
ADR transfer fee	1.50 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.

(2) In practice, the Depositary has not collected these fees. If collected, such fees are offset against the related distribution made to the ADR holder.

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 ADR holder.

Depositary payments in 2016

In 2016, our Depositary made the following payments on our behalf in relation to our ADR program.

Category	Payment, USD
Settlement infrastructure fees (including the Depositary Trust Company fees)	1 134 238.33
Proxy process expenses (including printing, postage and distribution)	741 811.94
ADS holder identification expenses	71 459.99
Legal fees	N/A
NYSE listing fees	554 639.00
Total	2 502 149.26

Additionally for 2016, our Depositary has agreed to reimburse us USD 2 662 184 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 United States listing of our ADSs.

Related party transactions

Other than the paid compensation, as described above, there have been no material transactions during the last three fiscal years to which any director, executive officer or 5% shareholder, or any relative or spouse of any of them, was a party. There is no significant outstanding indebtedness owed to Nokia by any director, executive officer or 5% shareholder.

In 2016, through the Acquisition of Alcatel Lucent, we also acquired Alcatel-Lucent Shanghai Bell Co. Ltd ("ASB"), a partly owned subsidiary incorporated in China, which has a counterparty, China Huaxin, with a non-controlling interest (50% less one share) that is material to the Group. ASB, with its subsidiaries in China and the rest of the world, including the RFS Group, comprise the Alcatel-Lucent Shanghai Bell Group. Refer to Note 33, Significant partly-owned subsidiaries, and Note 35, Related party transactions, of our consolidated financial statements included in this annual report on Form 20-F.

Production of infrastructure equipment and products

Our operations team handles the supply chain management of all its hardware, software and original equipment manufacturer products. This includes supply planning, manufacturing, distribution, procurement, logistics and supply.

On December 31, 2016, we had twelve manufacturing facilities globally: one in Australia, one in Brazil, three in China, one in Finland, two in France, one in Germany, one in India, one in the United Kingdom and one in the United States.

Most of our production and assembly is outsourced, while the remaining portion is carried out in our production sites. This system provides us with considerable flexibility in our manufacturing and enables us to meet demands related to cost, availability and customer requirements more easily.

The table below shows the productive capacity per location of significant manufacturing facilities for our infrastructure equipment on December 31, 2016.

Country	Location and products ⁽¹⁾	Productive capacity, Net (m ²) ⁽²⁾
Australia	Kilsyth: radio frequency systems	5 000
Brazil	Embu: radio frequency systems	7 800
China	Shanghai: fixed access and wireless access systems	23 000
China	Shanghai (cable): radio frequency systems	9 200
China	Shanghai (antenna): radio frequency systems	5 600
Finland	Oulu: base stations	16 000
France	Calais: submarine cables	48 000
France	Trignac: radio frequency systems	10 200
Germany	Hanover: radio frequency systems	21 000
India	Chennai: base stations, radio controllers and transmission systems	12 800
UK	Greenwich: submarine cables	19 500
USA	Meriden: radio frequency systems	31 000

(1) We consider the production capacity of our manufacturing network to be sufficient to meet the requirements of its network infrastructure 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.

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

General facts on Nokia continued

Key ratios

Operating profit

Profit before interest and taxes

Earnings per share (basic)

Profit attributable to equity holders of the parent

Average number of shares during the year

Earnings per share (diluted)

Adjusted profit attributable to equity holders of the parent

Average number of shares during the year adjusted for the effect of dilutive shares

P/E ratio

Closing share price as of December 31

Earnings per share (basic) for Continuing operations

Payout ratio

Dividend per share

Earnings per share (basic) for Continuing operations

Dividend yield %

Dividend per share

Closing share price as of December 31

Shareholders' equity per share

Capital and reserves attributable to equity holders of the parent

Number of shares as of December 31—number of treasury shares as of December 31

Market capitalization

(Number of shares as of December 31—number of treasury shares as of December 31) x closing share price as of December 31

Share turnover %

Number of shares traded during the year

Average number of shares during the year

Interest-bearing liabilities

Long-term interest-bearing liabilities (including the current portion thereof) + short-term borrowings

Net cash

Total cash and other liquid assets—interest-bearing liabilities

Controls and procedures

Our management, with the participation of our President and CEO and our Chief Financial Officer, conducted an evaluation pursuant to Rule 13a-15 promulgated under the Securities Exchange Act of 1934, as amended, of the effectiveness of our disclosure controls and procedures as of December 31, 2016. On January 4, 2016, we acquired Alcatel Lucent in a purchase business combination and as permitted by the Commission, our management has excluded the acquired business from its assessment of the effectiveness of disclosure controls and procedures as of December 31, 2016. Based on such evaluation, our President and CEO and our Chief Financial Officer have concluded that our disclosure controls and procedures were effective.

Disclosure controls and procedures means controls and other procedures that are designed to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Commission's rules and forms, and that such information required to be disclosed by us in the reports that we file or submit under the Exchange Act is accumulated and communicated to our management, including our principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosures.

Management's annual report on internal control over financial reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting for Nokia. Our internal control over financial reporting is designed to provide reasonable assurance to our management and the Board regarding the reliability of financial reporting and the preparation and fair presentation of published financial statements. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Therefore, even those systems determined to be effective can provide only reasonable assurances with respect to financial statement preparation and presentation. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may decline.

Our management evaluated the effectiveness of our internal control over financial reporting based on the COSO framework (2013 version). Our evaluation excluded the business acquired through the Acquisition of Alcatel Lucent which we acquired on January 4, 2016. Alcatel Lucent's sales constituted approximately 51% of our sales for fiscal year 2016, and Alcatel Lucent's assets constituted approximately 42% of our total assets as of December 31, 2016. Based on this evaluation, our management has assessed the effectiveness of Nokia's internal control over financial reporting at December 31, 2016 and concluded that such internal control over financial reporting is effective.

The effectiveness of our internal control over financial reporting as of December 31, 2016 has been audited by PricewaterhouseCoopers Oy, an independent registered public accounting firm, as stated in their report which appears on page 214 of this Annual Report on Form 20-F.

Material weaknesses in the acquired business

On January 4, 2016, we acquired Alcatel Lucent in a purchase business combination. We have excluded Alcatel Lucent from the December 31, 2016 evaluation of the effectiveness of our internal control over financial reporting and disclosure controls and procedures. In 2016, our management identified two material weaknesses in internal control over financial reporting in the acquired business.

A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual financial statements will not be prevented or detected on a timely basis.

Accounting for income taxes in the United States

In reviewing our accounting for income taxes for the year ended December 31, 2016 at a subsidiary of Alcatel Lucent in the United States, our management identified a material weakness in internal control over financial reporting related to the accounting for income taxes.

Specifically, the subsidiary's controls did not adequately identify all changes to deferred tax assets at the entity resulting primarily from a tax election made in the fourth quarter of 2016, which is described in "Operating and financial review and prospects—Provision for Income Taxes" in this Form 20-F. Nonetheless, we have concluded that this material weakness does not require a change to the fourth quarter or full year 2016 consolidated financial results that we released in February 2017.

As Alcatel Lucent was acquired during 2016, this material weakness in internal control over financial reporting does not impact our consolidated financial statements for any prior annual period.

Controls over revenue recognition in China

Subsequent to the Acquisition of Alcatel Lucent, management identified errors in the accounting for certain revenue transactions at a subsidiary of Alcatel Lucent in China. After conducting investigation of these matters, our management has concluded that a material weakness exists over the timing and amount of revenue recognition at that subsidiary.

Specifically, we did not maintain adequate controls over the assignment of roles and responsibilities between the accounting, operations and sales departments, controls over invoicing and cash application, or effective monitoring controls which resulted in revenue being recognized prior to valid delivery and customer acceptance. In response to the existence of these matters, our management has completed a detailed review of the results of the subsidiary and the statements of financial position as of the date of the Acquisition of Alcatel Lucent and as of December 31, 2016 and has concluded that the identified errors did not materially impact our consolidated financial statements for the year ended December 31, 2016.

As Alcatel Lucent was acquired during 2016, this material weakness in internal control over financial reporting does not impact our consolidated financial statements for any prior annual period.

Management's plans for remediation of the material weaknesses

With the oversight of our Audit Committee, our management has begun implementing a remediation plan to address the control deficiencies that resulted in the identified material weaknesses.

For the material weakness related to accounting for income taxes in the United States, the remediation plan includes the following: (i) continued efforts to integrate the local tax reporting processes throughout the Group and the implementation of standard income tax accounting systems and controls to ensure consistent execution of income tax accounting; (ii) augmentation of our tax accounting resources with the requisite skillsets to supplement the current complement of tax professionals in place; and (iii) providing additional income tax accounting training to our relevant United States tax professionals. Our plan is to remediate this material weakness in 2017.

For the material weakness related to revenue recognition in China, the remediation plan includes the following: (i) changes in the roles and responsibilities of the accounting, operations and sales departments in the areas of revenue recognition and enhancements to the invoicing and cash application controls; (ii) implementation of additional monitoring controls over the operations of the entity; (iii) enhancing resources to ensure qualified staffing in all key positions in the affected areas; and (iv) providing continued reinforcement of Nokia's culture of compliance and training to employees who are in positions of authority to embed Nokia's culture and behaviors. Our plan is to remediate this material weakness in 2017.

Changes in internal control over financial reporting

As noted above, our evaluation of internal controls excluded Alcatel Lucent, which was acquired on January 4, 2016 and which previously operated under its own set of systems and internal controls. During the integration period, our management is harmonizing certain processes within the acquired business to be able to integrate and test the effectiveness of Alcatel Lucent's internal controls over financial reporting in 2017.

Except as noted above, there were no changes in our internal control over financial reporting that occurred during the year ended December 31, 2016 that have materially affected, or are reasonably likely to materially affect, the Group's internal control over financial reporting.

General facts on Nokia continued

Attestation report of the registered public accounting firm

Refer to the auditors' report on page 214.

Exchange controls

There are currently no Finnish laws which 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, the companies with which we work 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 and services 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 or regulation favoring the local industry participants, as well as other measures with potentially protectionist objectives that the host governments in different countries may take. Export control, tariffs or other fees or levies imposed on our products and services, 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.

For example, in the United States, 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 in many areas on 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, location platform and associated services as well as technology and patent licensing; investment in fixed and wireless broadband communication infrastructure and operation of global data flows. In China, new partly local telecommunications standards have been enacted that may affect production processes and have an impact on our business. Additionally, with respect to certain developing market countries, for example, in Asia and in Latin and South America, the business environment we operate in can pose risks to our business due to unpredictable, discriminatory or protectionist regulation.

We are in continuous dialog with relevant state agencies, regulators and other decision makers through our government relations representatives in Washington, D.C., Paris, Brussels, Espoo, Berlin, Beijing, Moscow, São Paulo, Dubai, Singapore and Delhi as well as through our experts, industry associations and representatives in the regions of Asia, the Middle East and Africa, Europe, Latin America and North America in order to proactively exchange views and address the impact of any planned changes to the regulatory environment on our business activities.

Sales in U.S.-sanctioned countries

General

We are a global company and have sales in most countries of the world. For more information on our organizational structure refer to "Overview—This is Nokia—Organizational structure and reportable segments" and Note 4, Segment information, of our consolidated financial statements included in this annual report on Form 20-F. The region of Crimea as well as Cuba, Iran, North Korea, Sudan and Syria are targets of comprehensive United States economic sanctions.

Continuing operations

In Iran, we provide telecommunications equipment with ancillary services to various network operator customers and internet service providers through our Networks business. None of the equipment and services delivered by us in Iran is intended for military purposes, or intended to be used for the purpose of limiting political discourse, blocking legitimate forms of free speech or conducting surveillance of individuals.

In Cuba, we provide telecommunications equipment with local services to ETECSA, the exclusive Cuban public operator of mobile and fixed telecommunications networks, through our Networks business. In addition, we have provided local services through a joint venture with a Cuban government-owned entity. Our aggregate sales in Cuba consisted primarily of fixed, IP and transmission technology, and amounted to approximately EUR 7.3 million in 2016. We did not have any sales in Cuba in 2015 or 2014.

We have discontinued sales to customers in Syria and did not generate any revenue in Syria during 2016. We did not have any sales in North Korea, Sudan, or in the region of Crimea in 2016, 2015 or 2014.

Our aggregate net sales in 2016 to customers in Iran, Sudan and Syria accounted for approximately 0.37% of Nokia's Continuing operations total net sales, or approximately EUR 88 million. In 2015, our aggregate sales to customers in Iran, Sudan and Syria amounted to approximately EUR 62 million, which accounted for approximately 0.5% of Continuing operations total net sales; and EUR 5 million in 2014, which accounted for approximately 0.04% of Continuing operations total net sales.

Our Nokia Technologies business did not have sales in Cuba, Iran, North Korea, Sudan, Syria or in the region of Crimea, during 2016, 2015 or 2014.

We cannot exclude the possibility that third parties acting independently from us have exported our products to these countries from other countries in which we sell them, or that, for services distributed through the internet, third parties could have accessed them in markets or countries for which they are not intended by circumventing the industry standard protective mechanisms, such as IP address blocks, despite our efforts in implementing measures to prevent such actions.

Discontinued operations

In 2016 and 2015, our Discontinued operations did not generate any revenue in Cuba, Iran, Sudan or Syria. Our aggregate net sales to customers through our Discontinued operations for 2014 in Iran, Sudan and Syria accounted for approximately 0.20% of our total net sales, or EUR 24 million; and approximately 0.70% of Discontinued operation's total net sales.

Disclosure pursuant to Section 219 of the Iran Threat Reduction and Syria Human Rights Act of 2012

We continue to operate in Iran in compliance with applicable economic sanctions and other trade-related laws. In connection with the business activities relating to Iran, we currently have two local offices in Iran that employ 50 employees through a branch of a Finnish subsidiary and three employees through a branch of Alcatel Lucent International. Nokia also maintains a shareholding in Pishahang Communications Network Development Company ("Pishahang"). Nokia holds 49% of the outstanding shares of Pishahang. The other major shareholder in Pishahang is Information Technology Application Development TACFAM Company ("Tacfam") which holds 49% of the outstanding shares. Pishahang has been historically the contracting entity for Nokia in Nokia's transactions with MTN-Irancell, and Pishahang has not pursued, nor does it intend to pursue any other business.

We maintain routine contacts with governmental agencies in Iran as required, for example, to maintain a legal presence and office facilities in Iran, pay taxes and employ Iranian nationals.

To our knowledge, none of our sales in Iran in 2016 are required to be disclosed pursuant to ITRA Section 219, with the possible exception of the following:

In 2016, we provided radio, core and transmission equipment, including associated services, to Iranian mobile network operators, Mobile Communications Company of Iran ("MCCI") and MTN Irancell, as well as two local internet service providers, Shatel Group and Pars Online. Also, RFS, a wholly owned subsidiary of Alcatel-Shanghai Bell, has in 2016 sold wireless infrastructure products through an Iranian distributor, FourSat Kish. Additionally in 2016, we purchased certain fixed line telephony services from Telecommunication Company of Iran ("TCI").

Moreover, our subsidiary, Alcatel-Lucent Deutschland AG, in 2013 reached a settlement agreement with Iranian Telecommunication Manufacturing Company Public Stock Corporation ("ITMC") on claims raised by ITMC related to contracts that were completed prior to 2007 for the delivery of telecommunications equipment and services. In the course of these contracts, performance bonds had been opened between 2001 and 2006 at Bank Tejarat, Bank Saderat and Bank Mellat and had been retained by ITMC as security against their claims. The settlement agreement stipulates that Alcatel-Lucent Deutschland AG shall pay EUR 1.6 million to ITMC as settlement for the claims and that, in return, performance bonds held by ITMC shall be released. In 2016, the performance bonds held by ITMC have reduced in value from EUR 1.6 million to EUR 1.35 million. Payment of the settlement amount remains pending.

We further maintain, through our Alcatel Lucent branch offices, bank accounts at Bank Tejarat for purposes of carrying out routine financial transactions.

Although it is difficult to evaluate with any reasonable degree of certainty, we have concluded that we cannot exclude the possibility that TCI, MCCI, MTN Irancell, Shatel, Pars Online, ITMC, FourSat Kish or Tacfam is owned or controlled, directly or indirectly, by the government of Iran.

None of these activities involve U.S. affiliates of Nokia or Alcatel Lucent, or any U.S. persons.

In 2016, we recognized sales revenue of EUR 62.5 million and a net profit of EUR 25.5 million from business with MCCI, and sales revenue of EUR 22.5 million and a net loss of EUR 6.7 million from business with MTN Irancell. Furthermore, we recognized sales revenue of EUR 2.2 million and a net profit of EUR 0.6 million from business with Pars Online, and sales revenue of EUR 0.8 million and a net profit of EUR 0.5 million from business with Shatel. Moreover, RFS recognized sales revenue of approximately EUR 0.06 million, and net profit of EUR 0.02 million from business with FourSat Kish.

We intend to continue and seek to expand our business activities in Iran in compliance with applicable economic sanctions and other trade-related laws.

General facts on Nokia continued

Taxation

General

The statements of U.S. and Finnish tax laws set out below are based on the laws in force as of the date of this annual report on Form 20-F and may be subject to any changes in U.S. 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 summary, beneficial owners of ADSs that hold the ADSs as capital assets and that are considered residents of the United States for purposes of the current income tax convention between the United States and Finland, signed on September 21, 1989 (as amended by a protocol signed on May 31, 2006), referred to as the "Treaty", and that are entitled to the benefits of the Treaty under the "Limitation on Benefits" provisions contained in the Treaty, are referred to as "U.S. Holders". Beneficial owners that are citizens or residents of the United States, corporations created in or organized under U.S. law, and estates or trusts (to the extent their income is subject to U.S. tax either directly or in the hands of beneficiaries) generally will be considered to be residents of the United States under the Treaty. Special rules apply to U.S. 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 U.S. 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 U.S. 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, U.S. 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 U.S. Holders whose functional currency is not the U.S. dollar, who may be subject to special rules that are not discussed herein—holders of shares or ADSs that are U.S. Holders are advised to satisfy themselves as to the overall U.S. federal, state and local tax consequences, as well as to the overall Finnish and other applicable non-U.S. 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 U.S. Medicare tax on certain investment income.

For the purposes of both the Treaty and the U.S. Internal Revenue Code of 1986, as amended, referred to as the "Code", U.S. 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 expressly noted, applies equally to U.S. Holders of ADSs, on the one hand, and of shares on the other.

The holders of ADSs will, for Finnish tax purposes, be treated as the owners of the shares that are represented by the ADSs. The Finnish tax consequences to the holders of shares, as discussed below, also apply to the holders of ADSs.

U.S. and Finnish taxation of cash dividends

For U.S. federal income tax purposes, the gross amount of dividends paid to U.S. Holders of shares or ADSs, including any related Finnish withholding tax, generally will be included in gross income as foreign source dividend income. We do not expect to maintain calculations of our earnings and profits under U.S. federal income tax principles; therefore, U.S. Holders should expect that the entire amount of any distribution generally will be reported as dividend income. Dividends will not be eligible for the dividends received deduction allowed to corporations under Section 243 of the Code. The amount includible in income (including any Finnish withholding tax) will equal the U.S. dollar value of the payment, determined at the time such payment is received by the Depositary (in the case of ADSs) or by the U.S. Holder (in the case of shares), regardless of whether the payment is in fact converted into U.S. dollars. Generally, any gain or loss resulting from currency exchange rate fluctuations during the period between the time such payment is received and the date the dividend payment is converted into U.S. dollars will be treated as U.S. source ordinary income or loss to a U.S. Holder.

Special rules govern and specific elections are available to accrual method taxpayers to determine the U.S. dollar amount includible in income in the case of a dividend paid (and taxes withheld) in foreign currency. Accrual basis taxpayers are urged to consult their own tax advisers regarding the requirements and elections applicable in this regard.

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% payable on dividends paid by a Finnish resident company. However, pursuant to the Treaty, dividends paid to U.S. Holders generally will be subject to Finnish withholding tax at a reduced rate of 15% of the gross amount of the dividend.

Qualifying pension funds are, however, pursuant to the Treaty exempt from Finnish withholding tax. Refer also to “—Finnish withholding taxes on nominee registered shares” below.

Subject to conditions and limitations, Finnish income taxes withheld will be treated as foreign taxes eligible for credit against a U.S. Holder's U.S. federal income tax liability. Dividends received generally will constitute foreign source “passive category income” for foreign tax credit purposes. In lieu of a credit, a U.S. Holder may elect to deduct all of its foreign taxes provided the deduction is claimed for all of the foreign taxes paid by the U.S. Holder in a particular year. A deduction does not reduce U.S. tax on a dollar-for-dollar basis like a tax credit. The deduction, however, is not subject to the limitations applicable to foreign tax credits.

Provided that certain holding period and other requirements are met, certain U.S. Holders (including individuals and some trusts and estates) are eligible for reduced rates of U.S. 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 Nokia was not, in the year prior to the year in which the dividend was paid, and is not, in the year in which the dividend is paid, a passive foreign investment company (“PFIC”). Nokia currently believes that dividends paid with respect to its shares and ADSs will constitute qualified dividend income for U.S. 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 U.S. Holders. U.S. 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 U.S. federal income tax purposes for the taxable year ended December 31, 2016 and we do not expect to become a PFIC in the foreseeable future. U.S. 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, U.S. persons that are shareholders in a PFIC generally will be required to file an annual report disclosing the ownership of such shares and certain other information as yet to be determined. U.S. Holders should consult their own tax advisers regarding the application of the PFIC rules (including the new reporting requirements) to their ownership of our shares or ADSs.

The U.S. Treasury has expressed concern that parties to whom ADSs are released may be taking actions inconsistent with the claiming of foreign tax credits or reduced rates in respect of qualified dividends by U.S. Holders of ADSs. Accordingly, the analysis of the creditability of Finnish withholding taxes or the availability of qualified dividend treatment could be affected by future actions that may be taken by the U.S. Treasury with respect to ADSs.

Finnish withholding taxes on nominee registered shares

Generally, for U.S. Holders, the reduced 15% withholding tax rate of the Treaty (instead of 30%) is applicable to dividends paid to nominee registered shares only when the conditions of the provisions applied to dividends are met (Section 10b of the Finnish Act on Taxation of Non-residents' Income).

According to the provisions, the Finnish account operator and a foreign custodian are required to have a custody agreement, according to which the custodian undertakes to (a) declare the country of residence of the beneficial owner of the dividend, (b) confirm the applicability of the Treaty to the dividend, (c) inform the account operator of any changes to the country of residence or the applicability of the Treaty, and (d) provide the legal identification and address of the beneficial owner of the dividend and a certificate of residence issued by the local tax authorities upon request. It is further required that the foreign custodian is domiciled in a country with which Finland has entered into a treaty for the avoidance of double taxation and that the custodian is entered into the register of foreign custodians maintained by the Finnish tax authorities.

In general, if based on an applicable treaty for the avoidance of double taxation the withholding tax rate for dividends is 15% or higher, the treaty rate may be applied when the aforementioned conditions of the provisions are met (Section 10b of the Finnish Act on Taxation of Non-residents' Income). A lower rate than 15% may be applied based on the applicable treaty for the avoidance of double taxation only when the following information on the beneficial owner of the dividend is provided to the payer prior to the dividend payment: name, date of birth or business ID (if applicable) and address in the country of residence.

General facts on Nokia continued

U.S. and Finnish tax on sale or other disposition

A U.S. Holder generally will recognize taxable capital gain or loss on the sale or other disposition of ADSs in an amount equal to the difference between the U.S. dollar value of the amount realized and the adjusted tax basis (determined in U.S. dollars) in the ADSs. If the ADSs are held as a capital asset, this gain or loss generally will be long-term capital gain or loss if, at the time of the sale, the ADSs have been held for more than one year. Any capital gain or loss, for foreign tax credit purposes, generally will constitute U.S. source gain or loss. In the case of a U.S. Holder that is an individual, long-term capital gain generally is subject to U.S. federal income tax at preferential rates. The deductibility of capital losses is subject to significant limitations.

The deposit or withdrawal by a U.S. Holder of shares in exchange for ADSs or of ADSs for shares under the deposit agreement generally will not be subject to U.S. federal income tax or Finnish income tax.

The sale by a U.S. Holder of the ADSs or the underlying shares, other than an individual who, by reason of his residence in Finland for a period exceeding six months, is or becomes liable for Finnish income tax according to the relevant provisions of Finnish tax law, generally will not be subject to income tax in Finland, in accordance with Finnish tax law and the Treaty.

Finnish transfer tax

Transfers of shares and ADSs could be subject to the Finnish transfer tax only when one of the parties to the transfer is subject to Finnish taxation under the Finnish Income Tax Act by virtue of being a resident of Finland or a Finnish branch of a non-Finnish (a) credit institution (b) investment firm (c) management company of collective investment undertaking or (d) alternative investment fund manager. In accordance with the amendments in the Finnish Transfer Tax Act (applicable from November 9, 2007) no transfer tax is payable on the transfer of publicly traded shares or ADSs (irrespective of whether the transfer is carried out on a stock exchange or not). However, there are certain conditions for the exemption. Prior to the said amendments, transfer tax was not payable on stock exchange transfers. In cases where the transfer tax would be payable, the transfer tax would be 1.6% of the transfer value of the security traded.

Finnish inheritance and gift taxes

A transfer of an underlying share by gift or by reason of the death of a U.S. 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 U.S. Holders will not be subject to U.S. 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-U.S. Holders generally will not be subject to U.S. 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.

U.S. 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 U.S. 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 U.S. person required to establish their exempt status generally must furnish a duly completed IRS Form W-9 (Request for Taxpayer Identification Number and Certification). Non-U.S. holders generally are not subject to U.S. information reporting or backup withholding. However, such holders may be required to provide certification of non-U.S. 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 U.S.-related financial intermediaries. Backup withholding is not an additional tax. Amounts withheld as backup withholding may be credited against a holder's U.S. 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.

Financial statements

Contents

Consolidated income statement	144	17. Inventories	178
Consolidated statement of comprehensive income	145	18. Allowances for doubtful accounts	179
Consolidated statement of financial position	146	19. Prepaid expenses and accrued income	179
Consolidated statement of cash flows	147	20. Shares of the Parent Company	180
Consolidated statement of changes in shareholders' equity	148	21. Fair value and other reserves	181
Notes to consolidated financial statements	150	22. Other comprehensive income	182
1. Corporate information	150	23. Interest-bearing liabilities	183
2. Significant accounting policies	150	24. Fair value of financial instruments	184
3. Use of estimates and critical accounting judgments	157	25. Derivative financial instruments	187
4. Segment information	160	26. Share-based payment	188
5. Acquisitions	162	27. Pensions and other post-employment benefits	191
6. Disposals treated as Discontinued operations	166	28. Accrued expenses, deferred revenue and other liabilities	198
7. Revenue recognition	169	29. Provisions	199
8. Expenses by nature	169	30. Commitments and contingencies	201
9. Personnel expenses	170	31. Notes to the consolidated statement of cash flows	202
10. Other income and expenses	170	32. Principal Group companies	202
11. Financial income and expenses	171	33. Significant partly-owned subsidiaries	203
12. Income taxes	171	34. Investments in associates and other companies	203
13. Earnings per share	174	35. Related party transactions	204
14. Intangible assets	175	36. Risk management	206
15. Property, plant and equipment	176	37. Subsequent events	213
16. Impairment	177	Report of Independent Registered Public Accounting Firm	214

Consolidated income statement

For the year ended December 31	Notes	2016 EURm	2015(1) EURm	2014(1) EURm
Net sales	4, 7	23 614	12 499	11 762
Cost of sales	8	(15 158)	(6 963)	(6 774)
Gross profit		8 456	5 536	4 988
Research and development expenses	8	(4 904)	(2 080)	(1 904)
Selling, general and administrative expenses	8	(3 819)	(1 772)	(1 559)
Other income	10	116	236	118
Other expenses	8, 10	(949)	(223)	(229)
Operating (loss)/profit		(1 100)	1 697	1 414
Share of results of associated companies and joint ventures	34	18	29	(12)
Financial income and expenses	11	(287)	(186)	(403)
(Loss)/profit before tax		(1 369)	1 540	999
Income tax benefit/(expense)	12	457	(346)	1 719
(Loss)/profit for the year from Continuing operations		(912)	1 194	2 718
(Loss)/profit for the year from Continuing operations attributable to:				
Equity holders of the parent		(751)	1 192	2 710
Non-controlling interests		(161)	2	8
(Loss)/profit for the year from Continuing operations		(912)	1 194	2 718
(Loss)/profit for the year from Discontinued operations attributable to:				
Equity holders of the parent		(15)	1 274	752
Non-controlling interests		—	—	6
(Loss)/profit for the year from Discontinued operations	6	(15)	1 274	758
(Loss)/profit for the year attributable to:				
Equity holders of the parent		(766)	2 466	3 462
Non-controlling interests		(161)	2	14
(Loss)/profit for the year		(927)	2 468	3 476
Earnings per share attributable to equity holders of the parent	13	EUR	EUR	EUR
Basic earnings per share				
Continuing operations		(0.13)	0.32	0.73
Discontinued operations		0.00	0.35	0.20
(Loss)/profit for the year		(0.13)	0.67	0.94
Diluted earnings per share				
Continuing operations		(0.13)	0.31	0.67
Discontinued operations		0.00	0.32	0.18
(Loss)/profit for the year		(0.13)	0.63	0.85
Average number of shares		000s shares	000s shares	000s shares
Basic				
Continuing operations		5 732 371	3 670 934	3 698 723
Discontinued operations		5 732 371	3 670 934	3 698 723
(Loss)/profit for the year		5 732 371	3 670 934	3 698 723
Diluted				
Continuing operations		5 741 117	3 949 312	4 131 602
Discontinued operations		5 741 117	3 949 312	4 131 602
(Loss)/profit for the year		5 741 117	3 949 312	4 131 602

(1) In 2016, following the Acquisition of Alcatel Lucent, the Group adopted a new financial reporting structure which resulted in changes to allocation and presentation principles of certain costs. Comparatives for 2015 and 2014 have been recasted to reflect the new financial reporting structure.

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

Consolidated statement of comprehensive income

For the year ended December 31	Notes	2016 EURm	2015 EURm	2014 EURm
(Loss)/profit for the year		(927)	2 468	3 476
Other comprehensive income				
Items that will not be reclassified to profit or loss:				
Remeasurements on defined benefit plans		613	112	(275)
Income tax related to items that will not be reclassified to profit or loss		(269)	(28)	96
Items that may be reclassified subsequently to profit or loss:				
Translation differences		251	(1 054)	820
Net investment hedges		(103)	322	(167)
Cash flow hedges		14	(5)	(30)
Available-for-sale investments		(75)	113	106
Other (decrease)/increase, net		(6)	2	40
Income tax related to items that may be reclassified subsequently to profit or loss		20	(88)	16
Other comprehensive income/(loss), net of tax	22	445	(626)	606
Total comprehensive (loss)/income for the year		(482)	1 842	4 082
Attributable to:				
Equity holders of the parent		(277)	1 837	4 061
Non-controlling interests		(205)	5	21
Total comprehensive (loss)/income for the year		(482)	1 842	4 082
Attributable to equity holders of the parent:				
Continuing operations		(262)	1 513	2 350
Discontinued operations		(15)	324	1 711
Total attributable to equity holders of the parent		(277)	1 837	4 061
Attributable to non-controlling interests:				
Continuing operations		(205)	5	16
Discontinued operations		—	—	5
Total attributable to non-controlling interests		(205)	5	21

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

Consolidated statement of financial position

As of December 31	Notes	2016 EURm	2015 EURm
ASSETS			
Non-current assets			
Intangible assets	14, 16	10 960	560
Property, plant and equipment	15	1 981	695
Investments in associated companies and joint ventures	34	116	84
Available-for-sale investments	24	1 040	1 004
Deferred tax assets	12	5 701	2 634
Other non-current financial assets	24, 36	254	49
Defined benefit pension assets	27	3 802	25
Other non-current assets	19	328	51
Total non-current assets		24 182	5 102
Current assets			
Inventories	17	2 506	1 014
Accounts receivable, net of allowances for doubtful accounts	18, 24, 36	6 972	3 913
Prepaid expenses and accrued income	19	1 296	749
Current income tax assets		279	171
Other financial assets	24, 25, 36	296	128
Investments at fair value through profit and loss, liquid assets	24, 36	327	687
Available-for-sale investments, liquid assets	24, 36	1 502	2 167
Cash and cash equivalents	24, 36	7 497	6 995
Total current assets		20 675	15 824
Total assets		44 901	20 926
SHAREHOLDERS' EQUITY AND LIABILITIES			
Capital and reserves attributable to equity holders of the parent			
Share capital	20	246	246
Share issue premium		439	380
Treasury shares		(881)	(718)
Translation differences	21	483	292
Fair value and other reserves	21	488	204
Reserve for invested non-restricted equity		15 731	3 820
Retained earnings		3 588	6 279
Total capital and reserves attributable to equity holders of the parent		20 094	10 503
Non-controlling interests		881	21
Total equity		20 975	10 524
Non-current liabilities			
Long-term interest-bearing liabilities	23, 24, 36	3 657	2 023
Deferred tax liabilities	12	403	61
Defined benefit pension and post-retirement liabilities	27	5 000	423
Deferred revenue and other long-term liabilities	24, 28	1 453	1 254
Provisions	29	808	250
Total non-current liabilities		11 321	4 011
Current liabilities			
Short-term interest-bearing liabilities	23, 24, 36	370	51
Other financial liabilities	24, 25, 36	236	114
Current income tax liabilities		634	446
Accounts payable	24, 36	3 781	1 910
Accrued expenses, deferred revenue and other liabilities	28	6 412	3 395
Provisions	29	1 172	475
Total current liabilities		12 605	6 391
Total liabilities		23 926	10 402
Total shareholders' equity and liabilities		44 901	20 926

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

Consolidated statement of cash flows

For the year ended December 31	Notes	2016 EURm	2015 EURm	2014 EURm
Cash flow from operating activities				
(Loss)/profit for the year		(927)	2 468	3 476
Adjustments, total	31	2 407	(261)	(2 262)
Change in net working capital	31	(2 207)	(1 377)	988
Cash (used in)/from operations		(727)	830	2 202
Interest received		85	62	45
Interest paid		(309)	(99)	(336)
Income taxes paid, net		(503)	(290)	(636)
Net cash (used in)/from operating activities		(1 454)	503	1 275
Cash flow from investing activities				
Acquisition of businesses, net of acquired cash		5 819	(98)	(175)
Purchase of current available-for-sale investments, liquid assets(2)		(4 131)	(3 133)	(2 977)
Purchase of investments at fair value through profit and loss, liquid assets		—	(311)	—
Purchase of non-current available-for-sale investments		(73)	(88)	(73)
Proceeds from/(payment of) other long-term loans receivable		11	(2)	7
Proceeds from/(payment of) short-term loans receivable		19	(17)	20
Purchases of property, plant and equipment, and intangible assets		(477)	(314)	(311)
Proceeds from disposal of businesses, net of disposed cash(1)		6	2 586	2 508
Proceeds from disposal of shares in associated companies		10	—	7
Proceeds from maturities and sale of current available-for-sale investments, liquid assets(2)		5 121	3 074	1 774
Proceeds from maturities and sale of investments at fair value through profit and loss, liquid assets		368	48	—
Proceeds from sale of non-current available-for-sale investments		134	149	62
Proceeds from sale of property, plant and equipment and other intangible assets		28	—	44
Dividends received		1	2	—
Net cash from investing activities		6 836	1 896	886
Cash flow from financing activities				
Proceeds from stock option exercises		6	4	—
Purchase of treasury shares		(216)	(173)	(427)
Purchase of equity instruments of subsidiaries(2)		(724)	(52)	(45)
Proceeds from long-term borrowings		225	232	79
Repayment of long-term borrowings(2)		(2 599)	(24)	(2 749)
Repayment of short-term borrowings		(100)	(55)	(42)
Dividends paid and other contributions to shareholders		(1 515)	(512)	(1 392)
Net cash used in financing activities		(4 923)	(580)	(4 576)
Translation differences		43	6	(48)
Net increase/(decrease) in cash and cash equivalents		502	1 825	(2 463)
Cash and cash equivalents as of January 1		6 995	5 170	7 633
Cash and cash equivalents as of December 31		7 497	6 995	5 170

(1) In 2014, proceeds from the Sale of the D&S Business are presented net of the amount of principal and accrued interest on the repaid convertible bonds.

(2) In 2016, Alcatel Lucent ordinary shares and ADSs and OCEANEs acquired in cash by Nokia subsequent to the closing of the reopened exchange offer are presented within cash flow from financing activities as purchase of equity instruments of subsidiaries and repayment of long-term borrowings, respectively. In relation to the Public Buy-Out offer/Squeeze-Out, Nokia's pledged cash asset of EUR 724 million to cover the purchase of the remaining Alcatel Lucent securities was recorded within cash flow from investing activities as purchase of current available-for-sale investments, liquid assets. The amount of pledged cash released upon acquisition of Alcatel Lucent securities of EUR 724 million was recorded within cash flow from investing activities as proceeds from maturities and sale of current available-for-sale investments, liquid assets.

The consolidated statement of cash flows combines cash flows from both the Continuing and the Discontinued operations. Refer to Note 6, Disposals treated as Discontinued operations.

The amounts in the consolidated statement of cash flows cannot be directly traced from the consolidated statement of financial position without additional information on the acquisitions and disposals of subsidiaries and the net foreign exchange differences arising on consolidation.

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

Consolidated statement of changes in shareholders' equity

EURm	Notes	Number of shares outstanding (000s)	Share capital	Share issue premium	Treasury shares	Translation differences	Fair value and other reserves	Reserve for invested non-restricted equity	Retained earnings	Equity holders of the parent	Non-controlling interests	Total
As of January 1, 2014												
		3 712 427	246	615	(603)	434	80	3 115	2 581	6 468	192	6 660
Remeasurements of defined benefit plans, net of tax	21						(142)		(46)	(188)		(188)
Translation differences	21					813				813	7	820
Net investment hedge losses, net of tax	21					(148)				(148)		(148)
Cash flow hedges, net of tax							(30)			(30)		(30)
Available-for-sale investments, net of tax	21						103			103		103
Other increase, net							10		39	49		49
Profit for the year									3 462	3 462	14	3 476
Total comprehensive income/(loss) for the year			-	-	-	665	(59)	-	3 455	4 061	21	4 082
Share-based payment				4						4		4
Excess tax benefit on share-based payment				10						10		10
Settlement of performance and restricted shares		2 570		(25)	47			(32)		(10)		(10)
Acquisition of treasury shares		(66 904)			(427)					(427)		(427)
Stock options exercise		50								-		-
Dividends(1)									(1 374)	(1 374)	(9)	(1 383)
Disposal of subsidiaries										-	(109)	(109)
Acquisition of non-controlling interests									(7)	(7)	(38)	(45)
Convertible bond—equity component				(114)						(114)		(114)
Other movements				(51)	(5)		1		55	-	1	1
Total other equity movements			-	(176)	(385)	-	1	(32)	(1 326)	(1 918)	(155)	(2 073)
As of December 31, 2014		3 648 143	246	439	(988)	1 099	22	3 083	4 710	8 611	58	8 669
Remeasurements of defined benefit plans, net of tax	21						85		(7)	78		78
Translation differences	21					(1 057)				(1 057)	4	(1 053)
Net investment hedge gains, net of tax	21					252				252		252
Cash flow hedges, net of tax							(4)			(4)		(4)
Available-for-sale investments, net of tax	21						95			95		95
Other increase/(decrease), net							6		1	7	(1)	6
Profit for the year									2 466	2 466	2	2 468
Total comprehensive income/ (loss) for the year			-	-	-	(805)	182	-	2 460	1 837	5	1 842
Share-based payment				34						34		34
Excess tax benefit on share-based payment				(2)						(2)		(2)
Settlement of performance and restricted shares		1 281		(12)	24			(16)		(4)		(4)
Acquisition of treasury shares		(24 516)			(174)					(174)		(174)
Cancellation of treasury shares					427				(427)	-		-
Stock options exercise		1 042						4		4		4
Dividends(1)									(507)	(507)	(5)	(512)
Acquisition of non-controlling interests									(15)	(15)	(37)	(52)
Convertible bond—equity component				(57)					57	-		-
Convertible bond—conversion to equity		313 681		(30)				750		720		720
Other movements		(436)		8	(7)	(2)		(1)	1	(1)		(1)
Total other equity movements			-	(59)	270	(2)	-	737	(891)	55	(42)	13
As of December 31, 2015		3 939 195	246	380	(718)	292	204	3 820	6 279	10 503	21	10 524

EURm	Notes	Number of shares outstanding (000s)	Share capital	Share issue premium	Treasury shares	Translation differences	Fair value and other reserves	Reserve for invested non-restricted equity	Retained earnings	Equity holders of the parent	Non-controlling interests	Total
As of December 31, 2015		3 939 195	246	380	(718)	292	204	3 820	6 279	10 503	21	10 524
Remeasurements of defined benefit plans, net of tax	21						348			348	(4)	344
Translation differences	21					289				289	(38)	251
Net investment hedge losses, net of tax	21					(83)				(83)		(83)
Cash flow hedges, net of tax							12			12		12
Available-for-sale investments, net of tax	21						(73)			(73)		(73)
Other decrease, net							(1)			(4)	(2)	(6)
Loss for the year									(766)	(766)	(161)	(927)
Total comprehensive (loss)/income for the year			–	–	–	206	286	–	(769)	(277)	(205)	(482)
Share-based payment				117						117		117
Excess tax benefit on share-based payment				(6)						(6)		(6)
Settlement of performance and restricted shares		3 408		(22)	68			(52)		(6)		(6)
Acquisition of treasury shares	20	(54 296)			(231)					(231)		(231)
Stock options exercise		1 074		3				3		6		6
Dividends(1)									(1 501)	(1 501)	(14)	(1 515)
Acquisitions through business combinations	5	1 765 358						11 616		11 616	1 714	13 330
Equity issuance costs related to acquisitions								(16)		(16)		(16)
Acquisition of non-controlling interests		65 778				(15)	(2)	359	(459)	(117)	(635)	(752)
Vested portion of share-based payment awards related to acquisitions	5			6						6		6
Convertible bond—equity component				(38)					38	–		–
Other movements		(14)		(1)				1		–		–
Total other equity movements			–	59	(163)	(15)	(2)	11 911	(1 922)	9 868	1 065	10 933
As of December 31, 2016		5 720 503	246	439	(881)	483	488	15 731	3 588	20 094	881	20 975

(1) Dividend declared is EUR 0.17 per share, subject to shareholders' approval (dividend EUR 0.16 per share for 2015; special dividend EUR 0.10 per share for 2015; and dividend EUR 0.14 per share for 2014).

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

Notes to consolidated financial statements

1. Corporate information

Nokia Oyj, a public limited liability company incorporated and domiciled in Helsinki, Finland, is the parent company ("Parent Company" or "Parent") for all its subsidiaries ("Nokia" or "the Group"). The Group's operational headquarters are located in Espoo, Finland. The Group is listed on the Nasdaq Helsinki stock exchange, the New York stock exchange and the Euronext Paris stock exchange.

The Group is a leading global provider of mobile and fixed network infrastructure combining hardware, software and services, as well as advanced technologies and licensing that connect people and things.

On March 23, 2017 the Board of Directors authorized the financial statements for 2016 for issuance and filing.

2. Significant accounting policies

Basis of presentation and statement of compliance

The consolidated financial statements are prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board ("IASB") and as adopted by the European Union ("IFRS"). The consolidated financial statements are presented in millions of euros ("EURm"), except as otherwise noted, and are prepared under the historical cost convention, except as disclosed in the accounting policies below. The notes to the consolidated financial statements also conform to the Finnish accounting legislation.

In 2016, comparative presentation of certain items in the consolidated financial statements has been modified to conform with current year presentation.

Other information

This paragraph is included in connection with statutory reporting requirements in Germany. The fully consolidated German subsidiary, Nokia Solutions and Networks GmbH & Co. KG, registered in the commercial register of Munich under HRA 88537, has made use of the exemption available under § 264b of the German Commercial Code ("HGB").

Principles of consolidation

The consolidated financial statements comprise the financial statements of the Parent Company, and each of those companies over which it exercises control. Control over an entity exists when the Group is exposed, or has rights, to variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. When the Group has less than a majority of voting or similar rights in an entity, the Group considers all relevant facts and circumstances in assessing whether it has power over an entity, including the contractual arrangements, and voting rights and potential voting rights. The Group reassesses whether or not it controls an entity if facts and circumstances indicate that there are changes to the elements of control.

Consolidation of a subsidiary begins when the Group obtains control over the subsidiary and ceases when the Group loses control over the subsidiary. Assets, liabilities, income and expenses of a subsidiary acquired or disposed of during the year are included in the consolidated financial statements from the date the Group gains control until the date the Group ceases to control the subsidiary. A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction. If the Group loses control in a subsidiary, the related assets, liabilities, non-controlling interest and other components of equity are derecognized with any gain or loss recognized in the consolidated income statement. Any investment retained in the former subsidiary is measured at fair value.

All inter-company transactions are eliminated as part of the consolidation process. Non-controlling interests are presented

separately as a component of net profit and are shown as a component of shareholders' equity in the consolidated statement of financial position.

Business combinations

Business combinations are accounted for using the acquisition method. The consideration transferred in a business combination is measured as the aggregate of the fair values of the assets transferred, liabilities incurred towards the former owners of the acquired entity or business and equity instruments issued. Acquisition-related costs are recognized as expenses in the consolidated income statement in the period in which the costs are incurred and the related services are received with the exception of costs directly attributable to the issuance of equity instruments that are accounted for as a deduction from equity.

Identifiable assets acquired and liabilities assumed are measured at the acquisition date fair values. The Group elects whether to measure the non-controlling interests in the acquiree at fair value or at the proportionate share of the acquiree's identifiable net assets on a business combination by business combination basis. The excess of the aggregate of the consideration transferred and the amount recognized for non-controlling interests over the acquisition date fair values of the identifiable net assets acquired is recorded as goodwill.

Investment in associates and joint ventures

An associate is an entity over which the Group exercises significant influence. Significant influence is the power to participate in the financial and operating policy decisions of the entity, but is not control or joint control over those policies.

A joint venture is a type of joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about relevant activities require the unanimous consent of the parties sharing control.

The Group's investments in associates and joint ventures are accounted for using the equity method. Under the equity method, the investment in an associate or joint venture is initially recognized at cost. The carrying amount of the investment is adjusted to recognize changes in the Group's share of net assets of the associate or joint venture since the acquisition date. The Group's share of profits and losses of associates and joint ventures is included in the consolidated income statement outside operating profit or loss. Any change in other comprehensive income ("OCI") of associates and joint ventures is presented as part of the Group's OCI.

After application of the equity method, as of each reporting date the Group determines whether there is objective evidence that the investment in an associate or joint venture is impaired. If there is such evidence, the Group recognizes an impairment loss that is calculated as the difference between the recoverable amount of the associate or joint venture and its carrying value. The impairment loss is presented in 'Share of results of associated companies and joint ventures' in the consolidated income statement.

Non-current assets held for sale (or disposal groups) 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. For this to be the case, the asset, or the disposal group, must be available for immediate sale in its present condition subject only to terms that are usual and customary for sales of such assets or disposal groups, and the sale must be highly probable. These assets, or in the case of disposal groups, assets and liabilities, are presented separately in the consolidated statement of financial position and measured at the lower of the carrying amount and fair value less costs to sell.

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 operations are reported when a component of the Group, comprising operations and cash flows that can be clearly distinguished both operationally and for financial reporting purposes from the rest of the Group, is classified as held for sale or has been disposed of, or the component represents a major line of business or geographical area of operations, or is a 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. Cash flows for Discontinued operations are presented separately in the notes to the consolidated financial statements. Intra-group revenues and expenses between Continuing and Discontinued operations are eliminated.

Revenue recognition

Revenue is recognized when the following criteria for the transaction have been met: significant risks and rewards of ownership have transferred to the buyer; continuing managerial involvement and effective control usually associated with ownership have ceased; the amount of revenue can be measured reliably; it is probable that the economic benefits associated with the transaction will flow to the Group; and the costs incurred or to be incurred in respect of the transaction can be measured reliably. Revenue is measured at the fair value of the consideration received or receivable net of discounts and excluding taxes and duties.

Recurring service revenue which includes managed services and maintenance services is generally recognized on a straight-line basis over the agreed period, unless there is evidence that some other method better represents the rendering of services.

The Group enters into contracts consisting of any combination of hardware, services and software. Within these multiple element arrangements, separate components are identified and accounted for based on the nature of those components, considering the economic substance of the entire arrangement. Revenue is allocated to each separately identifiable component based on the relative fair value of each component. The fair value of each component is determined by taking into consideration factors such as the price of the component when sold separately and the component cost plus a reasonable margin when price references are not available. The revenue allocated to each component is recognized when the revenue recognition criteria for that component have been met.

Revenue from contracts involving the construction of an asset according to customer specifications is recognized using the percentage of completion method. Stage of completion for each contract is measured by either the achievement of contractually defined milestones or costs incurred compared to total project costs.

Revenue on license fees is recognized in accordance with the substance of the relevant agreements. Subsequent to the initial licensing transaction, where the Group has no remaining obligations to perform and licensing fees are non-refundable, revenue is recognized after the customer has been provided access to the underlying asset. Where the Group retains obligations related to the licensed asset after the initial licensing transaction, revenue is typically recognized over a period of time during which remaining performance obligations are satisfied. In some multiple element licensing transactions, the Group applies the residual method in the absence of reference information.

Net sales includes revenue from all licensing negotiations, litigations and arbitrations to the extent that the criteria for revenue recognition have been met.

Government grants

Government grants are recognized when there is reasonable assurance that the Group will comply with the conditions attached to them and the grants will be received. Government grants received as compensation for expenses or losses incurred are recognized in the consolidated income statement as a deduction against the related expenses. Government grants related to assets are presented in the consolidated statement of financial position as deferred income and recognized as income over the same period the asset is depreciated or amortized.

Government grants received in the form of R&D tax credits are recognized as a deduction against R&D expenses if the amount of the tax credit is linked to the amount of R&D expenditures incurred by the Group and the tax credit is a fully collectible asset which will be paid in cash by the government in case the Group is not able to offset it against its income tax payable. R&D tax credits that do not meet both conditions are recognized as income tax benefit.

Employee benefits

Pensions and other post-employment benefits

The Group companies have various post-employment plans in accordance with the local conditions and practices in the countries in which they operate. The plans are generally funded through payments to insurance companies or contributions to trustee-administered funds as determined by periodic actuarial calculations.

In a defined contribution plan, the Group's legal or constructive obligation is limited to the amount that it agrees to contribute to the fund. The Group's contributions to defined contribution plans, multi-employer and insured plans are recognized in the consolidated income statement in the period to which the contributions relate. If a pension plan is funded through an insurance contract where the Group does not retain any legal or constructive obligations, the plan is treated as a defined contribution plan. All arrangements that do not fulfill these conditions are considered defined benefit plans.

For defined benefit plans, including pension and post-retirement healthcare and life insurance, costs are assessed using the projected unit credit method: the cost is recognized in the consolidated income statement so as to spread the benefit over the service lives of employees. 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 appropriate maturities. Actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions are charged or credited to equity in other comprehensive income in the period in which they arise. Past service costs and settlement gains and losses are recognized immediately in the consolidated income statement as part of service cost, when the plan amendment, curtailment or settlement occurs. Curtailment gains and losses are accounted for as past service costs.

The liability or asset recognized in the consolidated statement of financial position is the defined benefit obligation as of the closing date less the fair value of plan assets including effects relating to any asset ceiling.

Remeasurements, comprising actuarial gains and losses, the effect of the asset ceiling and the return on plan assets, excluding amounts recognized in net interest, are recognized immediately in the consolidated statement of financial position with a corresponding debit or credit to Fair Value and Other Reserves in Equity through the consolidated statement of other comprehensive income in the period in which they occur. Remeasurements are not reclassified to the consolidated income statement in subsequent periods.

Actuarial valuations for the Group's defined benefit post-employment plans are performed annually or when a material curtailment or settlement of a defined benefit plan occurs.

Notes to consolidated financial statements continued

Termination benefits

Termination benefits are payable when employment is terminated before the normal retirement date, or whenever an employee accepts voluntary redundancy in exchange for these benefits. The Group recognizes termination benefits when it is demonstrably committed to either terminating the employment of current employees according to a detailed formal plan without possibility of withdrawal, or providing termination benefits as a result of an offer made to encourage voluntary redundancy. Local laws may provide employees with the right to benefits from the employer upon termination whether the termination is voluntary or involuntary. For these specific termination benefits, the portion of the benefit that the Group would be required to pay to the employee in the case of voluntary termination is treated as a constructive obligation determined by local law and accounted for as a defined benefit arrangement as described in the pensions section above.

Share-based payment

The Group offers three types of global equity-settled share-based compensation plans for employees: stock options, performance shares and restricted shares.

Employee services received and the corresponding increase in equity are measured by reference to the fair value of the equity instruments as of the grant date, excluding the impact of any non-market vesting conditions. Non-market vesting conditions attached to the performance shares are included in assumptions about the number of shares that the employee will ultimately receive. The Group reviews the assumptions made on a regular basis and, where necessary, revises its estimates of the number of performance shares that are expected to be settled. Plans that apply tranching vesting are accounted for under the graded vesting model. Share-based compensation is recognized as an expense in the consolidated income statement over the relevant service periods.

The Group has issued certain stock options which are accounted for as cash-settled. The related employee services received and the liabilities incurred are measured at the fair value of the liability. The fair value of stock options is estimated based on the reporting date market value less the exercise price of the stock options. The fair value of the liability is remeasured as of each reporting date and as of the date of settlement, with changes in fair value recognized in the consolidated income statement over the relevant service periods.

Income taxes

The income tax expense comprises current tax and deferred tax.

Tax is recognized in the consolidated income statement except to the extent that it relates to items recognized in other comprehensive income, or directly in equity; then the related tax is recognized in other comprehensive income or equity, respectively.

Current taxes are based on the results of group companies and are calculated using the local tax laws and tax rates that are enacted or substantively enacted as of each reporting date. Corporate taxes withheld at the source of the income on behalf of group companies, both recoverable and irrecoverable, as well as penalties and interests on income taxes are accounted for in income taxes.

The Group periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation. It adjusts the amounts recorded, where appropriate, on the basis of amounts expected to be paid to the tax authorities. The amount of current income tax liabilities for uncertain income tax positions is recognized when it is more likely than not that certain tax positions may not be fully sustained upon review by tax authorities. The amounts recorded are based upon the estimated future settlement amount as of each reporting date.

Deferred tax assets and liabilities are determined using the liability method for all temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. Deferred tax assets are recognized to the extent that it is probable that future taxable profit will be available against which the unused tax losses, unused tax credits or deductible temporary differences can be utilized before the unused tax losses or unused tax credits expire. Deferred tax assets are assessed for realizability as of each reporting date. When circumstances indicate it is no longer probable that deferred tax assets will be utilized, adjustments are made as necessary. Deferred tax liabilities are recognized for temporary differences that arise between the fair value and the tax base of identifiable net assets acquired in business combinations.

Deferred tax assets and deferred tax liabilities are offset for presentation purposes when there is a legally enforceable right to set off current tax assets against current tax liabilities, and the deferred tax assets and deferred tax liabilities relate to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities which intend either to settle current tax liabilities and assets on a net basis, or to realize the assets and settle the liabilities simultaneously in each future period in which significant amounts of deferred tax liabilities or deferred tax assets are expected to be settled or recovered.

Deferred tax liabilities are not recognized if they arise from the initial recognition of goodwill. Deferred tax liabilities are provided on taxable temporary differences arising from investments in subsidiaries, associates and joint arrangements, except for deferred tax liability where the timing of the reversal of the temporary difference is controlled by the Group, and it is probable that the temporary difference will not reverse in the foreseeable future.

The enacted or substantively enacted tax rates as of each reporting date that are expected to apply in the period when the asset is realized or the liability is settled are used in the measurement of deferred tax assets and deferred tax liabilities. Deferred tax assets and liabilities are not discounted.

Foreign currency translation

Functional and presentation currency

The financial statements of all group companies are measured using functional currency, which is the currency of the primary economic environment in which the entity operates. The consolidated financial statements are presented in euro, the functional and presentation currency of the Parent Company.

Transactions in foreign currencies

Transactions in foreign currencies are recorded at exchange rates prevailing as of the dates of the individual transactions. For practical reasons, a rate that approximates the actual rate as of the date of the transaction is often used. At the end of the reporting period, monetary assets and liabilities denominated in foreign currency are valued 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-current available-for-sale investments are included in the fair value measurement of these investments and recognized in other comprehensive income.

Foreign group companies

All income and expenses of foreign group companies where the functional currency is not the euro are translated into euro at the average foreign exchange rates for the reporting period. All assets and liabilities of foreign group companies are translated into euro at foreign exchange rates prevailing at the end of the reporting period.

Differences resulting from the translation of income and expenses at the average rate and assets and liabilities at the closing rate are recognized as translation differences in consolidated statement of comprehensive income. On the disposal of all or part of a foreign group company through sale, liquidation, repayment of share capital or abandonment, the cumulative amount or proportionate share of translation differences is recognized as income or expense when the gain or loss on disposal is recognized.

Intangible assets

Intangible assets acquired separately are measured on initial recognition at cost. The cost of intangible assets acquired in a business combination is their fair value as of the date of acquisition. Internally generated intangibles, except for development costs that may be capitalized, are expensed as incurred. Development costs are capitalized only if the Group has the technical feasibility to complete the asset; has an ability and intention to use or sell the asset; can demonstrate that the asset will generate future economic benefits; has resources available to complete the asset; and has the ability to measure reliably the expenditure during development.

Following initial recognition, intangible assets are carried at cost less accumulated amortization and accumulated impairment losses. Intangible assets are amortized over their useful lives, generally three to ten years, using the straight-line method which is considered reflecting best the pattern in which the asset's future economic benefits are expected to be consumed. The amortization charges are presented within cost of sales, research and development expenses and selling, general and administrative expenses in the consolidated income statement.

Property, plant and equipment

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
Machinery and equipment	
Production machinery, measuring and test equipment	1–5 years
Other machinery and equipment	3–10 years

Land and water areas are not depreciated.

Maintenance, repairs and renewals are generally expensed in the period in which they are incurred. However, major renovations are capitalized and included in the carrying amount of the asset when it is probable that future economic benefits in excess of the originally assessed standard of performance of the existing asset will flow to the Group. Major renovations are depreciated over the remaining useful life of the related asset. Leasehold improvements are depreciated over the shorter of the lease term and the useful life. Gains and losses on the disposal of property, plant and equipment are included in operating profit or loss.

Leases

Leases are classified as finance leases whenever the terms of the lease transfer substantially all the risks and rewards incidental to ownership to the lessee. All other leases are classified as operating leases.

The Group has entered into various operating lease contracts as a lessee. The related payments are treated as rental expenses and recognized in the consolidated income statement on a straight-line basis over the lease terms unless another systematic approach is more representative of the pattern of the benefit.

The Group does not have any significant finance lease arrangements.

Impairment of goodwill, other intangible assets and property, plant and equipment

The Group assesses the recoverability of the carrying value of goodwill, other intangible assets and property, plant and equipment if events or changes in circumstances indicate that the carrying value may be impaired. In addition, the Group tests the carrying value of goodwill for impairment annually even if there is no indication of impairment.

Factors that the Group considers when it reviews indications of impairment include, but are not limited to, underperformance of the asset relative to its historical or projected future results, significant changes in the manner of using the asset or the strategy for the overall business, and significant negative industry or economic trends.

For impairment testing purposes, goodwill is allocated to the cash-generating units or groups of cash-generating units expected to benefit from the synergies of the business combination. A cash-generating unit, as determined for the purposes of the Group's goodwill impairment testing, is the smallest group of assets, including goodwill, generating cash inflows that are largely independent of the cash inflows from other assets or groups of assets. The carrying value of a cash-generating unit includes its share of relevant corporate assets allocated to it on a reasonable and consistent basis.

The Group conducts its impairment testing by determining the recoverable amount for an asset or a cash-generating unit. The recoverable amount of an asset or a cash-generating unit is the higher of its fair value less costs of disposal and its value-in-use. The recoverable amount is compared to the asset's or cash-generating unit's carrying value. If the recoverable amount for the asset or cash-generating unit is less than its carrying value, the asset is considered impaired and is written down to its recoverable amount. Impairment losses are presented in other expenses, or as a separate line item if significant, in the consolidated income statement.

For more information on the annual impairment testing of goodwill, including key assumptions used in calculating the recoverable amount of goodwill, refer to Note 16, Impairment.

Inventories

Inventories are stated at the lower of cost and net realizable value. Cost is determined using standard cost, which approximates actual cost on a first-in first-out ("FIFO") basis. Net realizable value is the amount that can be realized from the sale of the inventory in the normal course of business after allowing for the costs of realization. In addition to the cost of materials and direct labor, an appropriate proportion of production overhead is included in the inventory values. An allowance is recorded for excess inventory and obsolescence based on the lower of cost and net realizable value.

Fair value measurement

A number of financial instruments are measured at fair value as of each reporting date after initial recognition. 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. The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest by using quoted market rates, discounted cash flow analyses and other appropriate valuation models. The Group uses valuation techniques that are appropriate in the circumstances and for which sufficient data is available to measure fair value, maximizing the use of relevant observable inputs and minimizing the use of unobservable inputs. All assets and liabilities for which fair values are being measured or disclosed in the consolidated financial statements are categorized within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

Notes to consolidated financial statements continued

Level 1—Quoted (unadjusted) market prices for exchange-traded products in active markets for identical assets or liabilities;

Level 2—Valuation techniques for which significant inputs other than quoted prices are directly or indirectly observable; and

Level 3—Valuation techniques for which significant inputs are unobservable.

The Group categorizes assets and liabilities that are measured at fair value on a recurring basis into an appropriate level of the fair value hierarchy at the end of each reporting period.

Financial assets

The Group has classified its financial assets in the following categories: available-for-sale investments, derivative and other current financial assets, loans receivable, accounts receivable, financial assets at fair value through profit or loss, and cash and cash equivalents. Derivatives are described in the section on derivative financial instruments.

Available-for-sale investments

The Group invests a portion of the cash needed to cover the projected cash outflows of its ongoing business operations in highly liquid, interest-bearing investments and certain equity instruments. The following investments are classified as available-for-sale based on the purpose of the investment and the Group's ongoing intentions:

- Available-for-sale investments, liquid assets consist of highly liquid, fixed-income and money-market investments with maturities at acquisition of more than three months, as well as bank deposits with maturities or contractual call periods at acquisition of more than three months.
- Investments in technology-related publicly quoted equity shares or unlisted private equity shares and unlisted venture funds, classified in the consolidated statement of financial position as non-current available-for-sale investments.

Current fixed-income and money-market investments are fair valued by using quoted market rates, discounted cash flow analyses and other appropriate valuation models as of the reporting date. Investments in publicly quoted equity shares are measured at fair value using exchange quoted bid prices. Other available-for-sale investments carried at fair value include holdings in unlisted shares. Fair value is estimated using a number of methods, including, but not limited to: the current market value of similar instruments; prices established from a recent arm's-length financing transaction of target companies; and analysis of market prospects and operating performance of target companies, taking into consideration public market comparable companies in similar industry sectors. The Group uses judgment in selecting the appropriate valuation methodology as well as underlying assumptions based on existing market practice and conditions. Changes in these assumptions may cause the Group to recognize impairments or losses in future periods.

The remaining available-for-sale investments are carried at cost less impairment. These are technology-related investments in private equity shares and unlisted venture funds for which fair value cannot be measured reliably due to non-existent public markets or reliable valuation methods.

All purchases and sales of investments are recorded on the trade date, that is, when the Group commits to purchase or sell the asset.

Changes in the fair value of available-for-sale investments are recognized in fair value and other reserves as part of other comprehensive income, with the exception of interest calculated using the effective interest method and foreign exchange gains and losses on current available-for-sale investments recognized directly in the consolidated income statement. Dividends on available-for-sale equity instruments are recognized in the consolidated income statement

when the Group's right to receive payment is established. When the investment is disposed of, the related accumulated fair value changes are released from other comprehensive income and recognized in the consolidated income statement. The weighted average method is used to determine the cost basis of publicly listed equities being disposed of. The FIFO method is used to determine the cost basis of fixed-income securities being disposed of. An impairment charge is recorded if the carrying amount of an available-for-sale investment is greater than the estimated fair value and there is objective evidence that the asset is impaired including, but not limited to, counterparty default and other factors causing a reduction in value that can be considered other than temporary. The cumulative net loss relating to the investment is removed from equity and recognized in the consolidated income statement for the period. If, in a subsequent period, the fair value of the investment in a non-equity instrument increases and the increase can be objectively related to an event occurring after the loss was recognized, the loss is reversed and the reversal is recognized in the consolidated income statement.

Investments at fair value through profit and loss, liquid assets

Certain highly liquid financial assets are designated at inception as investments at fair value through profit and loss, liquid assets. These investments must meet one of the following two criteria: the designation eliminates or significantly reduces an inconsistent treatment that would otherwise arise from measuring the assets or recognizing gains or losses on a different basis; or the assets are part of a group of financial assets, which are managed and their performance evaluated on a fair value basis in accordance with a documented risk management or investment strategy. These investments are initially recognized and subsequently remeasured at fair value. Fair value adjustments and realized gains and losses are recognized in the consolidated income statement.

Loans receivable

Loans receivable include loans to customers and suppliers and are measured initially at fair value and subsequently at amortized cost less impairment using the effective interest method. Loans are subject to regular review as to their collectability and available collateral. A valuation allowance is made if a loan is deemed not to be fully recoverable. The related cost is recognized in other expenses or financial expenses, depending on the nature of the receivable to reflect the shortfall between the carrying amount and the present value of expected future cash flows. Interest income on loans receivable is recognized in financial income and expenses in the consolidated income statement by applying the effective interest rate.

Cash and cash equivalents

Cash and cash equivalents consist of cash at bank and in hand and available-for-sale investments, cash equivalents. Available-for-sale investments, cash equivalents consist of highly liquid, fixed-income and money-market investments that are readily convertible to known amounts of cash with maturities at acquisition of three months or less, as well as bank deposits with maturities or contractual call periods at acquisition of three months or less. Due to the high credit quality and short-term nature of these investments, there is an insignificant risk of change in value. Investments in money-market funds that have a risk profile consistent with the aforementioned criteria are also classified as cash equivalents.

Accounts receivable

Accounts receivable include amounts invoiced to customers, amounts where revenue recognition criteria have been fulfilled but the customers have not yet been invoiced, and amounts where the contractual rights to the cash flows have been confirmed but the customers have not yet been invoiced. Billed accounts receivable are carried at the amount invoiced to customers less allowances for doubtful accounts. Allowances for doubtful accounts are based on a periodic review of all outstanding amounts, including an analysis of

historical bad debt, customer concentrations, customer creditworthiness, past due amounts, current economic trends and changes in customer payment terms. Impairment charges on receivables identified as uncollectible are included in other operating expenses in the consolidated income statement.

Financial liabilities

The Group has classified its financial liabilities into the following categories: derivative and other current financial liabilities, compound financial instruments, loans payable, and accounts payable. Derivatives are described in the section on derivative financial instruments.

Compound financial instruments

Compound financial instruments have both a financial liability and an equity component from the issuers' perspective. The components are defined based on the terms of the financial instrument and presented and measured separately according to their substance. The financial liability component is initially recognized at fair value, the residual being allocated to the equity component. The allocation remains the same for the life of the compound financial instrument. The financial liability components of convertible bonds issued by the Group are accounted for as loan payables.

Loans payable

Loans payable are recognized initially at fair value net of transaction costs. In subsequent periods, loans payable are presented at amortized cost using the effective interest method. Transaction costs and loan interest are recognized in the consolidated income statement as financial expenses over the life of the instrument.

Accounts payable

Accounts payable are carried at invoiced amount which is considered to be the fair value due to the short-term nature of the Group's accounts payable.

Derivative financial instruments

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. Generally, the cash flows of a hedge are classified as cash flows from operating activities in the consolidated statement of cash flows as the underlying hedged items relate to the Group's operating activities. When a derivative contract is accounted for as a hedge of an identifiable position relating to financing or investing activities, the cash flows of the contract are classified in the same way as the cash flows of the position being hedged.

Derivatives not designated in hedge accounting relationships carried at fair value through profit and loss

Forward foreign exchange 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 as of each reporting date by using the Garman & Kohlhagen option valuation model. Changes in fair value are recognized in the consolidated income statement.

Fair values of forward rate agreements, interest rate options, futures contracts and exchange-traded options are calculated based on quoted market rates as of each reporting date. Discounted cash flow analyses are used to value interest rate and cross-currency interest rate swaps. Changes in fair value are recognized in the consolidated income statement.

For derivatives not designated under hedge accounting but hedging identifiable exposures such as anticipated foreign currency denominated sales and purchases, the gains and losses are recognized in other income or expenses. The gains and losses on all other derivatives not designated under hedge accounting are recognized in financial income and expenses in the consolidated income statement.

Embedded derivatives, if any, are identified and monitored by the Group and measured at fair value as of each reporting date with changes in fair value recognized in the consolidated income statement.

Hedge accounting

The Group applies hedge accounting on certain forward foreign exchange contracts, options or option strategies, and interest rate derivatives. Qualifying options and option strategies have zero net premium or a net premium paid. For option structures, the critical terms of the bought and sold options are the same and the nominal amount of the sold option component is not greater than that of the bought option.

Cash flow hedges: hedging of forecast foreign currency denominated sales and purchases

The Group applies hedge accounting for qualifying hedges. Qualifying hedges are those properly documented cash flow hedges of foreign exchange rate risk of future forecast foreign currency denominated sales and purchases that meet the requirements set out in IAS 39, Financial Instruments: Recognition and Measurement. The hedged item must be highly probable and present an exposure to variations in cash flows that could ultimately affect profit or loss. The hedge must be highly effective, both prospectively and retrospectively.

For qualifying foreign exchange forwards, the change in fair value that reflects the change in spot exchange rates and, for qualifying foreign exchange options or option strategies, the change in intrinsic value are deferred in fair value and other reserves in shareholders' equity to the extent that the hedge is effective. The ineffective portion is recognized immediately in the consolidated income statement. Hedging costs, expressed either as the change in fair value that reflects the change in forward exchange rates less the change in spot exchange rates for forward foreign exchange contracts, or as changes in the time value for options or options strategies, are recognized in other income or expenses in the consolidated income statement.

Accumulated changes in fair value from qualifying hedges are released from fair value and other reserves into the consolidated income statement as adjustments to sales and cost of sales when the hedged cash flow affects the consolidated income statement. Forecast foreign currency sales and purchases affect the consolidated income statement at various dates up to approximately one year from the reporting date. If the forecasted transaction is no longer expected to take place, all deferred gains or losses are released immediately into the consolidated income statement. If the hedged item ceases to be highly probable but is still expected to take place, accumulated gains and losses remain in fair value and other reserves until the hedged cash flow affects the consolidated income statement.

Cash flow hedges: hedging of foreign currency risk of highly probable business acquisitions and other transactions

From time to time, the Group hedges cash flow variability caused by foreign currency risk inherent in highly probable business acquisitions and other future transactions that result in the recognition of non-financial assets. When those non-financial assets are recognized in the consolidated statement of financial position, the gains and losses previously deferred in fair value and other reserves are transferred to the initial acquisition cost of the asset. The deferred amounts are ultimately recognized in the consolidated income statement as a result of goodwill assessments for business acquisitions and through depreciation or amortization for other assets. The application of hedge accounting is conditional on the forecast transaction being highly probable and the hedge being highly effective, prospectively and retrospectively.

Notes to consolidated financial statements continued

Cash flow hedges: hedging of cash flow variability on variable rate liabilities

From time to time, the Group applies cash flow hedge accounting for hedging cash flow variability on certain variable rate liabilities. The effective portion of the gain or loss relating to interest rate swaps hedging variable rate borrowings is deferred in fair value and other reserves. The gain or loss related to the ineffective portion is recognized immediately in the consolidated income statement. If hedging instruments are settled before the maturity date of the related liability, hedge accounting is discontinued and all cumulative gains and losses recycled gradually to the consolidated income statement when the hedged variable interest cash flows affect the consolidated income statement.

Fair value hedges: hedging of foreign exchange exposure

The Group applies fair value hedge accounting for foreign exchange risk with the objective to reduce the exposure to fluctuations in the fair value of firm commitments due to changes in foreign exchange rates. Changes in the fair value of derivatives designated and qualifying as fair value hedges, together with any changes in the fair value of the hedged firm commitments attributable to the hedged risk, are recorded in financial income and expenses in the consolidated income statement.

Fair value hedges: hedging of interest rate exposure

The Group 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. Changes in the fair value of derivatives designated and qualifying as fair value hedges, together with any changes in the fair value of hedged liabilities attributable to the hedged risk, are recognized in financial income and expenses. If the hedged item no longer meets the criteria for hedge accounting, hedge accounting ceases and any fair value adjustments made to the carrying amount of the hedged item while the hedge was effective are recognized in financial income and expenses based on the effective interest method.

Hedges of net investments in foreign operations

The Group applies hedge accounting for its foreign currency hedging on net investments. Qualifying hedges are those properly documented hedges of foreign exchange rate risk of foreign currency denominated net investments that are effective both prospectively and retrospectively.

The change in fair value that reflects the change in spot exchange rates for qualifying foreign exchange forwards, and the change in intrinsic value for qualifying foreign exchange options, are deferred in translation differences in the consolidated statement of shareholder's equity. The change in fair value that reflects the change in forward exchange rates less the change in spot exchange rates for forwards, and changes in time value for options are recognized in financial income and expenses. If a foreign currency denominated loan is used as a hedge, all foreign exchange gains and losses arising from the transaction are recognized in translation differences. The ineffective portion is recognized immediately in the consolidated income statement.

Accumulated changes in fair value from qualifying hedges are released from translation differences on the disposal of all or part of a foreign Group company by sale, liquidation, repayment of share capital or abandonment. The cumulative amount or proportionate share of changes in the fair value of qualifying hedges deferred in translation differences is recognized as income or expense when the gain or loss on disposal is recognized.

Provisions

Provisions are recognized when the Group 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. When the Group expects a provision to be reimbursed, the reimbursement is recognized as an asset only when the reimbursement is virtually certain. The Group assesses the adequacy of its existing provisions and adjusts the amounts as necessary based on actual experience and changes in facts and circumstances as of each reporting date.

Restructuring provisions

The Group 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.

Warranty provisions

The Group provides for the estimated liability to repair or replace products under standard warranty at the time revenue is recognized. The provision is an estimate based on historical experience of the level of repairs and replacements.

Litigation provisions

The Group provides for the estimated future settlements related to litigation based on the probable outcome of potential claims.

Environmental provisions

The Group provides for estimated costs of environmental remediation relating to soil, groundwater, surface water and sediment contamination when the Group becomes obliged, legally or constructively, to rectify the environmental damage, or to perform restorative work.

Project loss provisions

The Group provides for onerous contracts based on the lower of the expected cost of fulfilling the contract and the expected cost of terminating the contract. An onerous contract is a contract in which the unavoidable costs of meeting the obligations under the contract exceed the economic benefits expected to be received under it.

Divestment-related provisions

The Group provides for indemnifications it is required to make to the buyers of its disposed businesses.

Material liability provisions

The Group recognizes the estimated liability for non-cancellable purchase commitments for inventory in excess of forecasted requirements at each reporting date.

Other provisions

The Group provides for other legal and constructive obligations based on the expected cost of executing any such commitments.

Treasury shares

The Group recognizes its own equity instruments that are acquired ("treasury shares") as a reduction of equity at cost of acquisition. When cancelled, the acquisition cost of treasury shares is recognized in retained earnings.

Dividends

Dividends proposed by the Board of Directors are recognized in the consolidated financial statements when they have been approved by the shareholders at the Annual General Meeting.

New and amended standards and interpretations adopted

On January 1, 2016, the Group adopted amendments to multiple IFRS standards, which resulted from the amendments to IAS 1 and the IASB's annual improvement project for the 2012-2014 cycles. They comprise amendments that result in accounting changes for presentation, recognition or measurement purposes, most visibly through additional guidance on use of judgment in applying materiality in aggregation and disaggregation of line items and more generally in the presentation in the financial statements. The amendments did not have a material impact on the Group's consolidated financial statements.

Standards issued but not yet effective

The Group will adopt the following new and revised standards, amendments and interpretations to existing standards issued by the IASB that are expected to be relevant to its operations and financial position when they become effective and are endorsed by the EU. Other revisions, amendments and interpretations to existing standards issued by the IASB that are not yet effective, except what has been described below, are not expected to have a material impact on the consolidated financial statements of the Group when adopted.

The Group has not early adopted any standard, interpretation or amendment that has been issued but is not yet effective.

IFRS 9 Financial Instruments

IFRS 9, Financial Instruments, was issued in July 2014 and replaces IAS 39, Financial Instruments: Recognition and Measurement. It addresses the classification and measurement of financial assets and liabilities, introduces a new impairment model and a new hedge accounting model. The Group will adopt the standard on the effective date of January 1, 2018.

The adoption of the new standard will impact the classification and measurement of the Group's financial assets. The Group has assessed the investments currently classified as current available-for-sale, liquid assets, and will classify certain bank deposits to be measured at amortized cost and certain investment funds to be measured at fair value through profit or loss at the adoption of the new standard. The rest of these investments satisfy the conditions for classification at fair value through other comprehensive income. Also certain trade receivables currently carried at the invoiced amount less allowances for doubtful accounts that are managed with a business model of hold to collect and occasionally sell would be classified at fair value through other comprehensive income. The Group's investments in venture funds that are currently classified as non-current available-for-sale investments would by default be classified at fair value through profit or loss with the election to classify certain investments at fair value through other comprehensive income being available at the adoption of the new standard.

The Group has assessed the impact of the new impairment model. As the credit quality of the Group's fixed income and money market investments is high, no significant impact from the new model is expected. While the Group has not yet assessed in detail the impact of the new model to its current valuation allowances, there can be a limited impact to valuation allowances for trade receivables and loans extended to the Group's customers as the new model may result in an earlier recognition of credit losses.

The new hedge accounting rules will align the accounting for hedging instruments more closely with the Group's risk management practices. The Group's foreign exchange risk management policy and hedge accounting model have already been aligned with the requirements from IFRS 9. Accordingly, the Group does not expect a significant impact on the accounting for its hedging relationships. The new standard also introduces expanded disclosure requirements and changes in presentation that are expected to change the nature

and extent of the group's disclosures about its financial instruments, particularly in the year of the adoption of the new standard. The Group continues to assess the detailed impact of IFRS 9.

IFRS 15 Revenue from Contracts with Customers

IFRS 15 Revenue from Contracts with Customers was issued in May 2014 and establishes a new five-step model that will apply to revenue arising from contracts with customers. Under IFRS 15, revenue is recognized to reflect the transfer of promised goods and services to customers for amounts that reflect the consideration to which an entity expects to be entitled in exchange for those goods and services to a customer. The Group will adopt the standard on the effective date of January 1, 2018. The new standard replaces IAS 18, Revenue, and IAS 11, Construction contracts. The Group is currently evaluating whether the application will be the full retrospective or modified retrospective method, both permissible under the new standard.

The Group currently believes that the adoption of the new standard will have a material impact on revenue. Specifically, under some license transfer contracts, revenue is expected to be recorded earlier at a point in time instead of over time. Due to the complexity of some of the Group's license subscription contracts, the actual revenue recognition treatment required under the new standard will be dependent on contract-specific terms. Also, revenue related to certain software contracts is likely to change from over time under the current standard to point in time. The Group continues to assess all potential impacts of IFRS 15.

IFRS 16 Leases

IFRS 16, Leases, issued in January 2016, sets out the requirements for the recognition, measurement, presentation and disclosure of leases. The Group expects to adopt the standard on the effective date of January 1, 2019. The standard provides a single lessee accounting model, requiring lessees to recognize right-of-use assets and lease liabilities for substantially all leases on the consolidated statement of financial position. The Group has started to analyze contracts containing identified assets and estimates that the standard will mainly affect the recognition and disclosure of the Group's operating leases. The full impact of IFRS 16 is currently being assessed. As of December 31, 2016 the Group has non-cancellable operating lease commitments of EUR 1 141 million. Refer to Note 30, Commitments and contingencies.

3. Use of estimates and critical accounting judgments

The preparation of consolidated financial statements requires use of management judgment in electing and applying accounting policies as well as in making estimates that involve assumptions about the future. These judgments, estimates and assumptions may have a significant effect on the consolidated financial statements.

The estimates used in determining the carrying amounts of assets and liabilities subject to estimation uncertainty are based on historical experience, expected outcomes and various other assumptions that were available when these consolidated financial statements were prepared, and they are believed to be reasonable under the circumstances. The estimates are revised if changes in circumstances occur, or as a result of new information or more experience. As estimates inherently contain a varying degree of uncertainty, actual outcomes may differ, resulting in additional charges or credits to the consolidated income statement.

Management considers that the estimates, assumptions and judgments about the following accounting policies represent the most significant areas of estimation uncertainty and critical judgment that may have an impact on the consolidated financial statements.

Notes to consolidated financial statements continued

Business combinations

The Group applies the acquisition method to account for acquisitions of separate entities or businesses. The determination of the fair value and allocation thereof to each separately identifiable asset acquired and liability assumed as well as the determination of the acquisition date, when the valuation and allocation is to be conducted require estimation and judgment.

Estimation and judgment are required in determining the fair value of the acquisition, including the discount rate, the terminal growth rate, the number of years on which to base the cash flow projections, and the assumptions and estimates used to determine the cash inflows and outflows. The discount rate reflects current assessments of the time value of money, relevant market risk premiums, and industry comparisons. Risk premiums reflect risks and uncertainties for which the future cash flow estimates have not been adjusted. Terminal values are based on the expected life of products and forecasted life cycle, and forecasted cash flows over that period. The assumptions are based on information available at the date of acquisition; actual results may differ materially from the forecast as more information becomes available. Refer to Note 5, Acquisitions.

Judgment was required in determining the date on which the Group obtained control of Alcatel Lucent. Nokia and Alcatel Lucent combined through a public exchange offer in which the Group offered to exchange all Alcatel Lucent shares, American Depositary Shares and OCEANE convertible bonds for Nokia shares. The initial offer period was opened on November 18, 2015 and it was closed on December 23, 2015. On January 4, 2016 the French stock market authority Autorité des Marchés Financiers ("AMF") published the interim results of the successful offer which indicated that the Group held 70.52% of the Alcatel Lucent share capital on a fully diluted basis. On January 7, 2016 the Group announced that it had settled the offer and registered the new shares in the Finnish Trade Register, which created legal standing for the acquisition.

The management concluded that it had obtained control over Alcatel Lucent on January 4, 2016 when it was announced that the offer had been successful and the Group had acquired the majority of voting rights in Alcatel Lucent.

In addition, management judgment was used to determine that the initial and reopened offers would be accounted for as a linked transaction. Pursuant to the Article 232-4 of the AMF General Regulation, any public exchange offer made shall be reopened with the same terms and conditions within ten trading days of publication of the final outcome of the offer provided that the offer has been successful. In conformity to this rule, the offer was reopened on January 14, 2016 and closed on February 3, 2016. The AMF published the results of the reopened offer on February 10, 2016 according to which the Group held 91.25% of the share capital of Alcatel Lucent.

Based on the facts that the reopened offer was compulsory according to the AMF General Regulation, the same terms and conditions applied to both the initial and reopened offers, and the reopened offer followed shortly after the initial offer and was open only for a short period, the management concluded that the initial and reopened offers are essentially parts of the same transaction. Therefore, the ownership interests acquired in the initial and reopened offers were accounted for as if they were all acquired at the acquisition date as part of the transaction to gain control. Acquisitions of ownership interests subsequent to the closing of the reopened offer were accounted for as equity transactions with the non-controlling interests in Alcatel Lucent.

Revenue recognition

The Group enters into transactions involving multiple components consisting of any combination of hardware, services, software and intellectual property rights where the Group identifies the separate components and estimates their relative fair values, considering the economic substance of the entire arrangement. The fair value of each component is determined by taking into consideration factors such as the price of the component when sold separately and the component cost plus a reasonable margin when price references are not available. The determination of the fair value and allocation thereof to each separately identifiable component requires the use of estimates and judgment which may have a significant impact on the timing and amount of revenue recognized. In some multiple element licensing transactions, the Group applies the residual method in the absence of reference information.

Net sales includes revenue from all licensing negotiations, litigations and arbitrations to the extent that the criteria for revenue recognition have been met. The final outcome may differ from the current estimate. Refer to Note 7, Revenue recognition.

Pension and other post-employment benefit obligations and expenses

The determination of pension and other post-employment benefit obligations and expenses for defined benefit plans is dependent on a number of estimates and assumptions, including the discount rate, future mortality rate, annual rate of increase in future compensation levels, and healthcare costs trend rates and usage of services in the United States where the majority of our post-employment healthcare plans are maintained. A portion of plan assets is invested in debt and equity securities, which are subject to market volatility. Changes in assumptions and actuarial estimates may materially affect the benefit obligation, future expense and future cash flow. Based on these estimates and assumptions, defined benefit obligations amount to EUR 28 663 million (EUR 1 840 million in 2015) and the fair value of plan assets amounts to EUR 27 770 million (EUR 1 451 million in 2015). The increase in both defined benefit obligations and fair value of plan assets in 2016 compared to 2015 is due to the Acquisition of Alcatel Lucent. Refer to Note 27, Pensions and other post-employment benefits.

Income taxes

The Group is subject to income taxes in the jurisdictions in which it operates. Judgment is required in determining current tax expense, uncertain tax positions, deferred tax assets and deferred tax liabilities; and the extent to which deferred tax assets can be recognized.

Estimates related to the recoverability of deferred tax assets are based on forecasted future taxable income and tax planning strategies. Based on these estimates and assumptions, the Group has EUR 20 952 million (EUR 1 843 million in 2015) of temporary differences, tax losses carry forward and tax credits for which no deferred tax assets are recognized due to uncertainty of utilization. Majority of the unrecognized deferred tax assets relate to France. Refer to Note 12, Income taxes.

The utilization of deferred tax assets is dependent on future taxable profit in excess of the profit arising from the reversal of existing taxable temporary differences. The recognition of deferred tax assets is based on the assessment of whether it is more likely than not that sufficient taxable profit will be available in the future to utilize the reversal of deductible temporary differences, unused tax losses and unused tax credits before the unused tax losses and unused tax credits expire. Recognition of deferred tax assets involves judgment regarding the future financial performance of the particular legal entity or tax group that has recognized the deferred tax asset.

Liabilities for uncertain tax positions are recorded based on estimates and assumptions of the amount and likelihood of outflow of economic resources when it is more likely than not that certain positions may not be fully sustained upon review by local tax authorities. Currently, the Group has ongoing tax investigations in multiple jurisdictions, including India and Germany. Due to the inherently uncertain nature of tax investigations, the ultimate outcome or actual cost of settlement may vary materially from estimates. Refer to Note 12, Income taxes.

Carrying value of cash-generating units ("CGUs")

The recoverable amounts of the groups of CGUs and the CGU were based on fair value less costs of disposal that was determined using market participant assumptions based on 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 five years. Five additional years of cash flow projections subsequent to the explicit forecast period reflect a gradual progression towards the steady state cash flow projections modeled in the terminal year. Estimation and judgment are required in determining the components of the recoverable amount calculation, including the discount rate, the terminal growth rate, estimated revenue growth rates, gross margin and operating margin. The discount rates reflect current assessments of the time value of money and relevant market risk premiums reflecting risks and uncertainties for which the future cash flow estimates have not been adjusted. The terminal growth rate assumptions reflect long-term average growth rates for the industry and economies in which the groups of CGUs and the CGU operate.

The Group allocated a significant proportion of the goodwill arising from the Acquisition of Alcatel Lucent to the IP/Optical Networks group of CGUs, which is comprised mainly of businesses acquired in the acquisition. As a result, the fair value of the IP/Optical Networks group of CGUs corresponds closely to its respective carrying amount.

The results of the impairment testing indicate significant headroom for each group of CGUs and CGU, except for the IP/Optical Networks group of CGUs, where the recoverable amount exceeds its carrying amount by approximately EUR 1 200 million. Taken in isolation, the following changes would cause the recoverable amount of IP/Optical Networks group of CGUs to equal its carrying amount:

- Increase in discount rate from 8.9% to 10.7%.
- Reduction in operational profitability in the terminal year by 40% which is equal to the decrease in the operating profit of EUR 331 million.

Total goodwill amounts to EUR 5 724 million as of December 31, 2016 (EUR 237 million in 2015). Refer to Note 14, Intangible assets and Note 16, Impairment.

Allowances for doubtful accounts

Allowances for doubtful accounts are recognized for estimated losses resulting from customers' inability to meet payment obligations. Estimation and judgment are required in determining the value of allowances for doubtful accounts at each reporting date. Management specifically analyzes accounts receivable and historical bad debt; customer concentrations; customer creditworthiness; past due balances; current economic trends; and changes in customer payment terms when determining allowances for doubtful accounts. Additional allowances may be required in future periods if financial positions of customers deteriorate, reducing their ability to meet payment obligations. Based on these estimates and assumptions, allowances for doubtful accounts are EUR 168 million (EUR 62 million in 2015), representing 2% of accounts receivable (2% in 2015). Refer to Note 18, Allowances for doubtful accounts.

Allowances for excess and obsolete inventory

Allowances for excess and obsolete inventory are recognized for excess amounts, obsolescence and declines in net realizable value below cost. Estimation and judgment are required in determining the value of the allowance for excess and obsolete inventory at each reporting date. Management specifically analyzes estimates of future demand for products when determining allowances for excess and obsolete inventory. Changes in these estimates could result in revisions to the valuation of inventory in future periods. Based on these estimates and assumptions, allowances for excess and obsolete inventory are EUR 456 million (EUR 195 million in 2015), representing 15% of inventory (16% in 2015). Refer to Note 17, Inventories.

Fair value of derivatives and other financial instruments

The fair value of derivatives and other financial instruments that are not traded in an active market such as unlisted equities is determined using valuation techniques. Estimation and judgment are required in selecting an appropriate valuation technique and in determining the underlying assumptions. Where quoted market prices are not available for unlisted shares, the fair value is based on a number of factors including, but not limited to, the current market value of similar instruments; prices established from recent arm's-length transactions; and/or analysis of market prospects and operating performance of target companies with reference to public market comparable companies in similar industry sectors. Changes in these estimates could result in impairments or losses in future periods. Based on these estimates and assumptions, the fair value of derivatives and other financial instruments that are not traded in an active market, using non-observable data (level 3 of the fair value hierarchy), is EUR 660 million (EUR 688 million in 2015), representing 24% of total net financial assets measured at fair value on a recurring basis (19% in 2015). Refer to Note 24, Fair value of financial instruments.

Provisions

Provisions are recognized when the Group 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. At times, judgment is required in determining whether the Group has a present obligation; estimation is required in determining the value of the obligation. Whilst provisions are based on the best estimate of unavoidable costs, management may be required to make a number of assumptions surrounding the amount and likelihood of outflow of economic resources, and the timing of payment. Changes in estimates of timing or amounts of costs to be incurred may become necessary as time passes and/or more accurate information becomes available. Based on these estimates and assumptions, provisions amount to EUR 1 980 million (EUR 725 million in 2015). Refer to Note 29, Provisions.

Legal contingencies

Legal proceedings covering a wide range of matters are pending or threatened in various jurisdictions. Provisions are recognized for pending litigation when it is apparent that an unfavorable outcome is probable and a best estimate of unavoidable costs can be reasonably estimated. Due to the inherently uncertain nature of litigation, the ultimate outcome or actual cost of settlement may vary materially from estimates. Refer to Note 29, Provisions.

Notes to consolidated financial statements continued

4. Segment information

The Group has two businesses: Nokia's Networks business and Nokia Technologies, and three reportable segments for financial reporting purposes: (1) Ultra Broadband Networks and (2) IP Networks and Applications within Nokia's Networks business; and (3) Nokia Technologies. Segment-level information for Group Common and Other is also presented.

The Group has aggregated Mobile Networks and Fixed Networks operating segments to one reportable segment, Ultra Broadband Networks; and IP/Optical Networks and Applications & Analytics operating segments to one reportable segment, IP Networks and Applications. The aggregated operating segments have similar economic characteristics, such as long-term margins; have similar products, production processes, distribution methods and customers; and operate in a similar regulatory environment.

The current operational and reporting structure was adopted following the Acquisition of Alcatel Lucent on January 4, 2016. Previously the Group had three operating and reportable segments in its Continuing operations for management reporting purposes: Mobile Broadband and Global Services within Nokia Networks, and Nokia Technologies. Prior period segment information has been regrouped and recasted for comparability purposes according to the new operating and reporting structure.

The chief operating decision maker receives monthly financial information for the operating and reportable segments. Key financial performance measures of the reportable segments include primarily net sales and operating profit. The chief operating decision maker evaluates the performance of the segments and allocates resources to them based on segment operating profit⁽¹⁾.

Accounting policies of the segments are the same as those described in Note 2, Significant accounting policies. Inter-segment revenues and transfers are accounted for as if the revenues were to third parties, that is, at current market prices. Certain costs and revenue adjustments⁽¹⁾ are not allocated to the segments.

No single customer represents 10% or more of revenues.

Segment descriptions

Ultra Broadband Networks

Ultra Broadband Networks comprises Mobile Networks and Fixed Networks operating segments.

The Mobile Networks operating segment offers an industry-leading portfolio of end-to-end mobile networking solutions comprising hardware, software and services for telecommunications operators, enterprises and related markets/verticals, such as public safety and Internet of Things ("IoT").

The Fixed Networks operating segment provides copper and fiber access products, solutions and services. The portfolio allows for a customized combination of technologies that brings fiber to the most economical point for the customer.

IP Networks and Applications

IP Networks and Applications comprises IP/Optical Networks and Applications & Analytics operating segments.

The IP/Optical Networks operating segment provides the key IP routing and optical transport systems, software and services to build high capacity network infrastructure for the internet and global connectivity.

The Applications & Analytics operating segment offers software solutions spanning customer experience management, network operations and management, communications and collaboration, policy and charging, as well as Cloud, IoT, security, and analytics platforms that enable digital services providers and enterprises to accelerate innovation, monetize services, and optimize their customer experience.

Nokia Technologies

The Nokia Technologies operating segment has two main objectives: to drive growth and renewal in its existing patent licensing business; and to build new businesses based on breakthrough innovation in key technologies and products, in the areas of Digital Media and Digital Health.

From January 2016, the majority of net sales and related costs and expenses attributable to licensing and patenting the separate patent portfolios of Nokia Technologies, Nokia's Networks business, and Nokia Bell Labs are recorded in Nokia Technologies. Each reportable segment continues to separately record its own research and development expenses.

Group Common and Other

Segment-level information for Group Common and Other is also presented. From January 2016, Group Common and Other includes the Alcatel-Lucent Submarine Networks and Radio Frequency Systems businesses, both of which are being managed as separate entities. In addition, Group Common and Other includes Nokia Bell Labs' operating expenses, as well as certain corporate-level and centrally managed operating expenses.

⁽¹⁾ Segment results exclude costs related to the Acquisition of Alcatel Lucent and related integration, goodwill impairment charges, intangible asset amortization and other purchase price fair value adjustments, restructuring and associated charges and certain other items.

Segment information

EURm	Ultra Broadband Networks(1)	IP Networks and Applications(2)	Nokia's Networks business total(3)	Nokia Technologies	Group Common and Other	Eliminations	Segment total	Unallocated items(4)	Total
Continuing operations									
2016									
Net sales to external customers	15 770	6 029	21 799	1 038	1 108	–	23 945	(331)	23 614
Net sales to other segments	1	–	1	15	37	(53)	–	–	–
Depreciation and amortization	348	151	499	8	45	–	552	1 042	1 594
Impairment charges	9	–	9	–	8	–	17	–	17
Operating profit/(loss)	1 362	573	1 935	579	(342)	–	2 172	(3 272)	(1 100)
Share of results of associated companies and joint ventures	18	–	18	–	–	–	18	–	18
2015									
Net sales to external customers	10 159	1 328	11 487	1 012	–	–	12 499	–	12 499
Net sales to other segments	–	–	–	15	–	(15)	–	–	–
Depreciation and amortization	158	35	193	6	8	–	207	79	286
Impairment charges	–	–	–	–	11	–	11	–	11
Operating profit/(loss)	1 211	138	1 349	698	(89)	–	1 958	(261)	1 697
Share of results of associated companies and joint ventures	29	–	29	–	–	–	29	–	29
2014									
Net sales to external customers	9 817	1 326	11 143	618	1	–	11 762	–	11 762
Net sales to other segments	1	–	1	14	–	(15)	–	–	–
Depreciation and amortization	131	33	164	2	7	–	173	67	240
Impairment charges	–	–	–	–	13	–	13	–	13
Operating profit/(loss)	1 251	188	1 439	389	(226)	–	1 602	(188)	1 414
Share of results of associated companies and joint ventures	(12)	–	(12)	–	–	–	(12)	–	(12)

(1) Includes Mobile Networks net sales of EUR 13 406 million (EUR 10 023 million in 2015 and EUR 9 639 million in 2014) and Fixed Networks net sales of EUR 2 365 million (EUR 136 million in 2015 and EUR 179 million in 2014).

(2) Includes IP Routing net sales of EUR 2 940 million (EUR 515 million in 2015 and EUR 523 million in 2014), Optical Networks net sales of EUR 1 562 million and Applications & Analytics net sales of EUR 1 527 million (EUR 813 million in 2015 and EUR 803 million in 2014).

(3) Includes services net sales of EUR 8 531 million (EUR 5 424 million in 2015 and EUR 5 078 million in 2014).

(4) Excludes costs related to the Acquisition of Alcatel Lucent and related integration, goodwill impairment charges, intangible asset amortization and other purchase price fair value adjustments, restructuring and associated charges and certain other items.

Reconciliation of total segment operating profit to total operating profit

EURm	2016	2015	2014
Total segment operating profit	2 172	1 958	1 602
Amortization and depreciation of acquired intangible assets and property, plant and equipment	(1 026)	(79)	(67)
Release of acquisition-related fair value adjustments to deferred revenue and inventory	(840)	–	–
Restructuring and associated charges	(774)	(123)	(57)
Product portfolio strategy costs	(348)	–	–
Transaction and related costs, including integration costs relating to the Acquisition of Alcatel Lucent	(295)	(99)	(39)
Other	11	40	(25)
Total operating (loss)/profit	(1 100)	1 697	1 414

Notes to consolidated financial statements continued

Net sales to external customers by geographic location of customer

EURm	2016	2015	2014
Finland(1)	1 138	1 100	680
United States	6 635	1 489	1 445
China	2 249	1 323	994
India	1 281	1 098	768
France	1 055	207	220
United Kingdom	717	394	296
Australia	646	133	189
Japan	627	877	1 194
Germany	567	312	400
Saudi Arabia	565	364	291
Other	8 134	5 202	5 285
Total	23 614	12 499	11 762

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

Non-current assets by geographic location(1)

EURm	2016	2015
Finland	726	724
United States	7 946	159
France	2 369	2
China	458	129
India	130	70
Other	1 312	171
Total	12 941	1 255

(1) Consists of goodwill and other intangible assets and property, plant and equipment.

5. Acquisitions

Alcatel Lucent business combination

On April 15, 2015, the Group and Alcatel Lucent announced their intention to combine through a public exchange offer ("exchange offer") in France and the United States. Alcatel Lucent is a global leader in IP networking, ultra-broadband access and Cloud applications. The combined company leverages the combined scale of operations, complementary technologies, portfolios and geographical presence; and unparalleled innovation capabilities to lead in the next generation network technology and services, and to create access to an expanded addressable market with improved long-term growth opportunities.

Acquisition of Alcatel Lucent Securities

The Group obtained control of Alcatel Lucent on January 4, 2016 when the interim results of the successful initial exchange offer were announced by the French stock market authority, Autorité des Marchés Financiers ("AMF"). On January 14, 2016, as required by the AMF General Regulation, the Group reopened its exchange offer in France and the United States for the outstanding Alcatel Lucent ordinary shares, Alcatel Lucent American Depositary Shares ("ALU ADS") and OCEANE convertible bonds (the "OCEANES", collectively "Alcatel Lucent Securities") not tendered during the initial exchange offer period. The reopened exchange offer closed on February 3, 2016. The Group has determined that the initial and the reopened exchange offers are linked transactions that are considered together as a single arrangement, given that the reopened exchange offer is required by the AMF General Regulation and is based on the same terms and conditions as the initial exchange offer.

As part of the exchange offers, holders of Alcatel Lucent Securities could exchange Alcatel Lucent Securities for Nokia shares and Nokia American Depositary Shares ("Nokia ADS") on the basis of 0.55 Nokia share or Nokia ADS for every Alcatel Lucent share or ALU ADS.

Following the initial and reopened exchange offers, the Group held 90.34% of the share capital, and at least 90.25% of the voting rights of Alcatel Lucent. The Group issued a total of 1 776 379 756 new Nokia shares as consideration for the Alcatel Lucent Securities tendered in the exchange offers.

Alcatel Lucent ordinary shares and ALU ADSs acquired subsequent to the closing of the reopened exchange offer, including through the Public Buy-Out Offer and the Squeeze-Out, were accounted for as equity transactions with the remaining non-controlling interests in Alcatel Lucent. As such, any new Nokia shares or cash consideration paid for these instruments were recorded directly in equity against the carrying amount of non-controlling interests. The acquisition of OCEANES subsequent to the transactions linked to the exchange offer was treated both as extinguishment of debt and equity transaction with remaining non-controlling interests in Alcatel Lucent, with the redemption consideration allocated to the liability and equity components.

Subsequent to the exchange offers, the following transactions were carried out relating to the acquisition of the remaining outstanding equity interests in Alcatel Lucent:

- On February 12, 2016, the OCEANES acquired as part of the initial and reopened exchange offers were converted to Alcatel Lucent shares.
- On February 19, 2016, the Group announced the issue of 6 501 503 new Nokia shares in exchange for Alcatel Lucent shares in a private transaction at the 0.55 exchange offer provided in the initial and reopened exchange offers. This transaction was based on a Board of Directors resolution on February 18, 2016.
- On May 9, 2016, the acquisition of 107 775 949 Alcatel Lucent shares was closed in exchange for 59 276 772 new Nokia shares from JPMorgan Chase Bank N.A., as depositary, pursuant to the share purchase agreement announced on March 17, 2016. These shares represented Alcatel Lucent shares that remained in the ALU ADS receipts program after the cancellation period and following the program's termination on April 25, 2016.
- On May 12, 2016, the Group agreed to acquire 72 994 133 of 2019 OCEANES and 19 943 533 of 2020 OCEANES through a privately negotiated transaction in consideration for an aggregate cash payment of EUR 419 million.
- On June 17, 2016, 24 392 270 Alcatel Lucent shares, 9 614 661 of 2019 OCEANES and 2 290 001 of 2020 OCEANES were acquired through privately negotiated transactions in consideration for an aggregate cash payment of EUR 85 million for the Alcatel Lucent shares (corresponding to a unit price of EUR 3.50 per share) and EUR 54 million for the OCEANES (corresponding to a unit price of EUR 4.51 per 2019 OCEANE and EUR 4.50 per 2020 OCEANE).

Following these transactions, the Group held 95.32% of the share capital and 95.25% of the voting rights in Alcatel Lucent, corresponding to 95.15% of the Alcatel Lucent shares on a fully diluted basis.

On September 6, 2016, a joint offer document was filed with Alcatel Lucent with the AMF relating to the proposed Public Buy-Out Offer, in cash, for the remaining Alcatel Lucent shares and OCEANES (the "Public Buy-Out Offer"). The Public Buy-Out Offer was followed by a Squeeze-Out in accordance with the AMF General Regulation, in cash, for the Shares and OCEANES not tendered into the Public Buy-Out Offer (the "Squeeze-Out", and together with the Public Buy-Out Offer, the "Offer").

Following the AMF Offer clearance decision on September 20, 2016, the Group commenced the Public Buy-Out Offer on September 22, 2016 pursuant to which it proposed to all holders of the Alcatel Lucent shares and OCEANES to acquire Nokia securities. The financial terms of the Public Buy-Out Offer were:

- EUR 3.50 per Alcatel Lucent share;
- EUR 4.51 per 2019 OCEANE; and
- EUR 4.50 per 2020 OCEANE.

On October 4, 2016, the AMF announced that a legal action was filed before the Paris Court of Appeal on September 30, 2016 for the annulment of the AMF's Offer clearance decision. Pursuant to the AMF General Regulation, the Group provided a pledge in relation to the Offer to cover the purchase of the remaining Alcatel Lucent Securities.

On October 25, 2016, the AMF announced the continuation of the Offer timetable. Accordingly, the Public Buy-Out Offer period ended on October 31, 2016, and the Squeeze-Out was implemented on November 2, 2016, in accordance with the AMF General Regulation. In the Squeeze-Out, the Alcatel Lucent shares and OCEANES not tendered into the Public Buy-Out Offer were transferred to the Group for the same consideration as the above-mentioned consideration of the Public Buy-Out Offer, net of all costs. The remaining outstanding Alcatel Lucent stock options and performance shares were modified to settle in cash or Nokia shares.

On November 2, 2016, following the Public Buy-Out Offer and the Squeeze-Out, the Group held 100% of the share capital and voting rights of Alcatel Lucent. Alcatel Lucent shares and OCEANES were delisted from the Euronext Paris regulated market on the same date.

On December 15, 2016, the plaintiffs withdrew their complaint for the annulment of the AMF's Offer clearance decision from the Paris Court of Appeal. Consequently, the commitments, put in place as a precautionary measure, are no longer in force and the funds and Alcatel Lucent Securities deposited into escrow accounts were released and the Group no longer has an obligation to maintain the integrity of the entity Alcatel Lucent SA.

Purchase consideration

The purchase consideration comprises the fair value of the consideration paid for the Alcatel Lucent Securities obtained through the exchange offers, and the fair value of the portion of Alcatel Lucent stock options and performance shares attributable to pre-combination services that were settled with Nokia shares. The fair value of the purchase consideration is based on the closing price of Nokia share of EUR 6.58 on Nasdaq Helsinki on January 4, 2016, and the exchange offer ratio of 0.55 Nokia share for every Alcatel Lucent share.

Notes to consolidated financial statements continued

Fair value of the purchase consideration:

	EURm
Alcatel Lucent shares or ADSs	10 046
OCEANE convertible bonds	1 570
Consideration attributable to the vested portion of replacement share-based payment awards	6
Total	11 622

Fair value of the purchase consideration is based on the results of the initial and the reopened exchange offers.

Purchase accounting

The Group has finalized Alcatel Lucent acquisition-related purchase accounting, including purchase price allocation. The fair values of the identifiable assets and liabilities, as of the date of acquisition:

	EURm
Non-current assets	
Intangible assets	5 711
Property, plant and equipment	1 412
Deferred tax assets	2 328
Defined benefit pension assets	3 201
Other non-current assets	687
Total non-current assets	13 339
Current assets	
Inventories	1 992
Accounts receivable	2 813
Other current assets	1 360
Cash and cash equivalents	6 198
Total current assets	12 363
Total assets acquired	25 702
Non-current liabilities	
Long-term interest-bearing liabilities	4 037
Deferred tax liabilities	425
Defined benefit pension and post-retirement liabilities	4 464
Other non-current liabilities	601
Total non-current liabilities	9 527
Current liabilities	
Current borrowings and other financial liabilities	671
Other current liabilities	7 252
Total current liabilities	7 923
Total liabilities assumed	17 450
Net identifiable assets acquired	8 252
Attributable to:	
Equity holders of the parent	6 538
Non-controlling interests	1 714
Goodwill	5 084
Purchase consideration	11 622

Goodwill arising from the Acquisition of Alcatel Lucent amounts to EUR 5 084 million and is primarily attributable to synergies arising from the significant economies of scale and scope that the Group is expecting to benefit from as part of the new combined entity. Goodwill was allocated to the four operating segments within Nokia's Networks business. Refer to Note 16, Impairment.

The components of non-controlling interests in Alcatel Lucent that are present ownership interests and entitle their holders to a proportionate share of the entity's net assets in the event of liquidation, were measured based on the non-controlling interests' proportionate share of the fair value of the acquired identifiable net assets. As such, goodwill excludes the goodwill related to the non-controlling interests. The equity component of the remaining outstanding OCEANEs, as well as the outstanding stock options and performance shares that will be settled in Alcatel Lucent ordinary shares were measured at fair value within non-controlling interests.

Fair values of other intangible assets acquired:

	Fair value EURm	Amortization period years
Customer relationships	2 902	10
Technologies	2 170	4
Other	639	8
Total	5 711	

Acquisition-related costs not directly attributable to the issue of shares, recorded in selling, general and administrative expenses and other expenses in the consolidated income statement, and in operating cash flows in the consolidated statement of cash flows, amount to EUR 125 million, of which EUR 93 million is recognized in 2016.

From January 4 to December 31, 2016 the acquired business contributed revenues of EUR 12 151 million and a net loss of EUR 508 million to the consolidated income statement. These amounts have been calculated using the subsidiary's results, adjusting them for accounting policy alignments.

Other acquisitions

In 2016 the Group acquired four businesses (two businesses in 2015), which are individually immaterial to the consolidated financial statements. Goodwill arising on acquisitions is attributable to future derivations of the acquired technology, future customers and assembled workforce, and has been allocated to cash-generating units or groups of cash-generating units expected to benefit from the synergies of the combination. Refer to Note 16, Impairment. The majority of goodwill acquired in 2016 is not expected to be deductible for tax purposes. The acquired intangible assets are primarily technology-based intangible assets.

Acquisitions in 2016 and 2015:

Company/business	Description
2016	
Nakina Systems Inc.	Nakina Systems Inc. is a Canadian security and operational systems software company. The Group acquired the business through an asset transaction on March 31, 2016.
Withings S.A.	Withings S.A. is a provider of digital health products and services. The Group acquired 100% ownership interest on May 31, 2016.
Gainspeed	Gainspeed is a United States-based start-up specializing in Distributed Access Architecture ("DDA") solutions for the cable industry through its Virtual Converged Cable Access Platform ("CCAP") product line. The Group acquired 100% ownership interest on July 29, 2016.
ETA Devices	ETA Devices is a United States-based start-up specializing in power amplifier efficiency solutions for base stations, access points and devices. The Group acquired 100% ownership interest on October 4, 2016.
2015	
Wireless network business of Panasonic	The business transfer included Panasonic's LTE/3G wireless base station system business, related wireless equipment system business, fixed assets and business contracts with Panasonic's customers as well as more than 300 Panasonic employees. The Group acquired the business through an asset transaction on January 1, 2015.
Eden Rock Communications, LLC	Eden Rock Communications is a pioneer in SON and creator of Eden-NET, an industry leading multivendor centralized in SON solution. The Group acquired 100% ownership interest on July 10, 2015.

Total consideration paid, aggregate fair values of intangible assets, other net assets acquired and resulting goodwill as of each acquisition date:

EURm	2016	2015
Other intangible assets	70	56
Other net assets	16	33
Total identifiable net assets	86	89
Goodwill	274	7
Total purchase consideration(1)	360	96

(1) The total purchase consideration does not equal to the acquisition of businesses, net of acquired cash in the consolidated statement of cash flows due to foreign exchange rate differences and the timing of the consideration payment.

Notes to consolidated financial statements continued

6. Disposals treated as Discontinued operations

Results of Discontinued operations

EURm	2016	2015	2014
Net sales	–	1 075	3 428
Cost of sales	–	(244)	(2 325)
Gross profit	–	831	1 103
Research and development expenses	–	(498)	(899)
Selling, general and administrative expenses	(11)	(213)	(628)
Other income and expenses	(4)	(23)	(1 354)
Operating (loss)/profit	(15)	97	(1 778)
Financial income and expenses	14	(9)	10
(Loss)/profit before tax	(1)	88	(1 768)
Income tax (expense)/benefit	(28)	8	(277)
(Loss)/profit for the year, ordinary activities	(29)	96	(2 045)
Gain on the sale of HERE and D&S Businesses, net of tax(1)	14	1 178	2 803
(Loss)/profit for the year	(15)	1 274	758

(1) In 2016, an additional gain on the sale of EUR 7 million was recognized related to the HERE business as a result of the final settlement of the purchase price, and EUR 7 million related to the D&S business due to a tax indemnification.

Sale of the HERE Business

On August 3, 2015 the Group announced the Sale of the HERE Business to a consortium of leading automotive companies, comprising AUDI AG, BMW Group and Daimler AG. Subsequent to the announcement, the Group has presented the HERE business as Discontinued operations. The HERE business was previously an operating and reportable segment and its business focused on the development of location intelligence, location-based services and local commerce. The Sale of the HERE Business was completed on December 4, 2015.

Gain on the Sale of the HERE Business

	EURm
Fair value of sales proceeds less costs to sell(1)	2 551
Net assets disposed of	(2 667)
Total	(116)
Foreign exchange differences reclassified from other comprehensive income(2)	1 174
Gain before tax	1 058
Income tax benefit(3)	120
Total gain	1 178

(1) Comprises purchase price of EUR 2 800 million, offset by adjustments for certain defined liabilities of EUR 249 million.

(2) Includes cumulative translation differences for the duration of ownership from translation of mainly U.S. dollar denominated balances into euro.

(3) The disposal was largely tax exempt, the tax benefit is due to hedging-related tax deductible losses.

Assets and liabilities, HERE business

Assets and liabilities disposed of at December 4, 2015:

EURm	December 4, 2015
Goodwill and other intangible assets	2 722
Property, plant and equipment	115
Deferred tax assets and non-current assets	151
Inventories	14
Trade and other receivables	174
Prepaid expenses and other current assets	87
Cash and cash equivalents and current available-for-sale investments, liquid assets	56
Total assets	3 319
Deferred tax liabilities and other liabilities	286
Trade and other payables	55
Deferred income and accrued expenses	306
Provisions	5
Total liabilities	652
Net assets disposed of	2 667

Results of Discontinued operations, HERE business

EURm	2016	2015	2014
Net sales	–	1 075	970
Cost of sales	–	(243)	(239)
Gross profit	–	832	731
Research and development expenses	–	(498)	(545)
Selling, general and administrative expenses	(1)	(198)	(181)
Other income and expenses(1)	–	(18)	(1 247)
Operating (loss)/profit	(1)	118	(1 242)
Financial income and expenses	–	2	5
(Loss)/profit before tax	(1)	120	(1 237)
Income tax expense(2)	(3)	–	(310)
(Loss)/profit for the year, ordinary activities	(4)	120	(1 547)
Gain on the Sale of the HERE Business, net of tax(3)	7	1 178	–
Profit/(loss) for the year	3	1 298	(1 547)
Costs and expenses include:			
Depreciation and amortization	–	(33)	(57)
Impairment charges	–	–	(1 209)

(1) In 2014, includes impairment of goodwill of EUR 1 209 million.

(2) Excludes the tax impact of the disposal.

(3) Represents net gain on disposal. In 2016, includes EUR 7 million recognized as a result of the final settlement of the purchase price.

Cash flows from Discontinued operations, HERE business

EURm	2016	2015	2014
Net cash (used in)/from operating activities	(2)	12	106
Net cash (used in)/from investing activities	(25)	2 503	(104)
Net cash flow for the year	(27)	2 515	2

Sale of the D&S Business

In September 2013, the Group announced the Sale of the D&S Business to Microsoft. Subsequent to the approval of the sale in the Extraordinary General Meeting in November 2013, the Group has presented the Devices & Services business as Discontinued operations including items outside the final transaction scope; specifically, discontinued manufacturing facilities located in Chennai, India and Masan, Republic of Korea. The Devices & Services business consisted of two previously reportable segments, Smart Devices and Mobile Phones as well as Devices & Services Other. Smart Devices focused on more advanced products, including smartphones powered by the Windows Phone operating system. Mobile Phones focused on the area of mass market entry, feature phones and affordable smartphones. Devices & Services Other included spare parts, the divested Vertu business and major restructuring programs related to the Devices & Services business.

The Sale of the D&S Business was completed on April 25, 2014. The total purchase price was EUR 5 440 million comprising the Sale of the D&S Business and a ten-year non-exclusive license to patents and patent applications with an option to extend the mutual patent agreement in perpetuity. The value allocated to the Sale of the D&S Business was EUR 3 790 million and the fair value of the mutual patent agreement and the future option was EUR 1 650 million. The gain on disposal was EUR 3 175 million. The gain may change in subsequent periods depending on the development of certain liabilities for which the Group has indemnified Microsoft.

Gain on the Sale of the D&S Business

	EURm
Fair value of sales proceeds less costs to sell(1)	5 167
Net assets disposed of	(2 347)
Settlement of Windows Phone royalty(2)	383
Other	(28)
Total	3 175
Foreign exchange differences reclassified from other comprehensive income	(212)
Gain before tax	2 963
Income tax expense(3)	(160)
Total gain	2 803

(1) Comprises purchase price of EUR 3 790 million, net cash adjustment of EUR 1 114 and other adjustments of EUR 263 million.

(2) Recognized when the partnership with Microsoft to license the Windows Phone smartphone platform was terminated in conjunction with the Sale of the D&S Business.

(3) Primarily includes non-resident capital gains taxes in certain jurisdictions, as well as tax impacts of legal entity restructuring carried out in connection with the Sale of the D&S Business.

Notes to consolidated financial statements continued

Assets and liabilities, Devices & Services business

Assets and liabilities disposed of at April 25, 2014:

EURm	April 25, 2014
Goodwill and other intangible assets	1 427
Property, plant and equipment	534
Deferred tax assets and non-current assets	371
Inventories	374
Trade and other receivables	541
Prepaid expenses and other current assets	1 638
Cash and cash equivalents and current available-for-sale investments, liquid assets	1 114
Total assets	5 999
Deferred tax liabilities and other liabilities	203
Trade and other payables	1 340
Deferred income and accrued expenses	1 205
Provisions	795
Total liabilities	3 543
Non-controlling interests	109
Net assets disposed of	2 347

Results of Discontinued operations, Devices & Services business

EURm	2016	2015	2014
Net sales	–	–	2 458
Cost of sales	–	(1)	(2 086)
Gross (loss)/profit	–	(1)	372
Research and development expenses	–	–	(354)
Selling, general and administrative expenses	(10)	(15)	(447)
Other income and expenses	(4)	(5)	(107)
Operating loss	(14)	(21)	(536)
Financial income and expenses	14	(11)	5
Loss before tax	–	(32)	(531)
Income tax (expense)/benefit(1)	(25)	8	33
Loss for the year, ordinary activities	(25)	(24)	(498)
Gain on the Sale of the D&S Business, net of tax(2)	7	–	2 803
(Loss)/profit for the year	(18)	(24)	2 305
Costs and expenses include:			
Impairment charges	–	–	(111)

(1) Excludes the tax impact of the disposal.

(2) Represents net gain on disposal. In 2016, includes EUR 7 million recognized due to a tax indemnification.

Cash flows from Discontinued operations, Devices & Services business

EURm	2016	2015	2014
Net cash used in operating activities	(8)	(6)	(1 054)
Net cash from investing activities	28	50	2 480
Net cash used in financing activities	–	–	(9)
Net cash flow for the year	20	44	1 417

On April 25, 2014, upon completion of the Sale of the D&S Business, EUR 500 million 1.125% convertible bonds due September 2018, EUR 500 million 2.5% convertible bonds due September 2019 and EUR 500 million 3.625% convertible bonds due September 2020, all issued by the Group to Microsoft, were repaid and netted against the deal proceeds by the amount of principal and accrued interest.

7. Revenue recognition

EURm	2016	2015	2014
Continuing operations			
Revenue from sale of products and licensing	14 526	7 045	6 448
Revenue from services(1)	8 156	5 395	4 961
Contract revenue recognized under percentage of completion accounting(2)	931	59	353
Total	23 614	12 499	11 762

(1) Excludes services performed as part of contracts under percentage of completion accounting.

(2) In 2016, contract revenue includes submarine projects, which account for the majority of the revenue.

Revenue recognition-related positions for construction contracts in progress as of December 31:

	2016		2015	
EURm	Assets	Liabilities	Assets	Liabilities
Contract revenues recorded prior to billings	11		16	
Billings in excess of costs incurred		164		29
Work in progress on construction contracts	57		—	
Advances received		113		—
Retentions	1		2	

Work in progress is included in inventories, other assets are included in accounts receivable, and liabilities are included in accrued expenses in the consolidated statement of financial position.

The aggregate amount of costs incurred and profits recognized, net of recognized losses, for construction contracts in progress since inception are EUR 970 million as of December 31, 2016 (EUR 670 million in 2015). For construction contracts acquired in 2016, the amount includes costs incurred and profits recognized from the acquisition date.

8. Expenses by nature

EURm	2016	2015	2014
Continuing operations			
Personnel expenses (Note 9)	7 814	3 738	3 381
Cost of material	7 260	2 907	2 957
Depreciation and amortization (Notes 14, 15)	1 594	286	240
Rental expenses	344	164	154
Other	7 818	3 943	3 734
Total operating expenses	24 830	11 038	10 466

Operating expenses include government grant income and R&D tax credits of EUR 126 million (EUR 20 million in 2015 and EUR 17 million in 2014) that have been recognized in the consolidated income statement as a deduction against research and development expenses.

Notes to consolidated financial statements continued

9. Personnel expenses

EURm	2016	2015	2014
Continuing operations			
Salaries and wages	6 275	3 075	2 797
Share-based payment expense(1)	130	67	53
Pension and other post-employment benefit expense, net(2)	458	223	189
Other social expenses	951	373	342
Total	7 814	3 738	3 381

(1) Includes EUR 119 million for equity-settled awards (EUR 43 million in 2015 and EUR 14 million in 2014).

(2) Includes costs related to defined contribution plans of EUR 236 million (EUR 172 million in 2015 and EUR 144 million in 2014) and costs related to defined benefit plans of EUR 222 million (EUR 51 million in 2015 and EUR 45 million in 2014). Refer to Note 27, Pensions and other post-employment benefits.

The average number of employees is 102 687 (56 690 in 2015 and 51 499 in 2014).

10. Other income and expenses

EURm	2016	2015	2014
Continuing operations			
Other income			
Interest income from customer receivables and overdue payments	29	6	23
VAT and other indirect tax refunds and social security credits	19	17	7
Realized gains from unlisted venture funds	13	144	18
Subsidies and government grants	11	4	15
Profit on sale of property, plant and equipment	—	8	15
Other	44	57	40
Total	116	236	118
Other expenses			
Restructuring, cost reduction and associated charges	(759)	(120)	(61)
Valuation allowances for doubtful accounts and accounts receivable write-offs	(116)	24	5
Expenses related to sale of receivables transactions	(42)	(21)	(39)
Foreign exchange loss on hedging forecasted sales and purchases	(26)	(22)	(15)
Impairment charges	(17)	(11)	(13)
Losses and expenses related to unlisted venture funds	(4)	(47)	—
Loss on sale of property, plant and equipment	(3)	(5)	(12)
VAT and other indirect tax write-offs and provisions	1	(3)	(15)
Contractual remediation costs	—	5	(31)
Other	17	(23)	(48)
Total	(949)	(223)	(229)

11. Financial income and expenses

EURm	2016	2015	2014
Continuing operations			
Interest income on investments and loans receivable	84	31	50
Net interest expense on derivatives not under hedge accounting	(18)	(4)	(4)
Interest expense on financial liabilities carried at amortized cost(1)	(234)	(135)	(387)
Net interest expense on defined benefit pensions (Note 27)	(65)	(9)	(2)
Net realized gains on disposal of fixed income available-for-sale financial investments	15	2	1
Net fair value (losses)/gains on investments at fair value through profit and loss	(18)	(2)	20
Net gains/(losses) on other derivatives designated at fair value through profit and loss	21	(5)	(20)
Net fair value gains/(losses) on hedged items under fair value hedge accounting	11	7	(18)
Net fair value (losses)/gains on hedging instruments under fair value hedge accounting	(15)	(12)	17
Net foreign exchange losses	(9)	(76)	(61)
Other financial income(2)	85	31	15
Other financial expenses(3)	(144)	(14)	(14)
Total	(287)	(186)	(403)

(1) In 2016, interest expense includes one-time charges of EUR 41 million, primarily related to the redemption of Alcatel-Lucent USA Inc. USD 650 million 4.625% notes due July 2017, USD 500 million 8.875% notes due January 2020 and USD 700 million 6.750% notes due November 2020. In 2014, interest expense included a one-time non-cash charge of EUR 57 million relating to the repayment of the EUR 1.5 billion convertible bonds issued to Microsoft when the Sale of the D&S Business was completed and one-time expenses of EUR 123 million relating to the redemption of materially all, then Nokia Networks' borrowings.

(2) Includes distributions of EUR 66 million (EUR 25 million in 2015 and EUR 14 million in 2014) from private venture funds held as non-current available-for-sale investments.

(3) Includes impairments of EUR 108 million (EUR 2 million in 2014) related to private venture funds held as non-current available-for-sale investments. Refer to Note 16, Impairment.

12. Income taxes

Components of the income tax benefit/(expense)

EURm	2016	2015	2014
Continuing operations			
Current tax	(534)	(258)	(300)
Deferred tax	991	(88)	2 019
Total	457	(346)	1 719

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 consolidated income statement:

EURm	2016	2015	2014
Income tax benefit/(expense) at statutory rate	274	(308)	(200)
Permanent differences	31	16	(41)
Tax impact on operating model changes(1)	439	—	—
Non-creditable withholding taxes	(42)	(17)	(31)
Income taxes for prior years	3	6	(14)
Effect of different tax rates of subsidiaries operating in other jurisdictions	88	(50)	(47)
Effect of deferred tax assets not recognized(2)	(318)	(35)	(26)
Benefit arising from previously unrecognized deferred tax assets(3)	19	38	2 081
Net (increase)/decrease in uncertain tax positions	(20)	4	—
Change in income tax rates	3	—	(1)
Income taxes on undistributed earnings	(23)	(7)	—
Other	3	7	(2)
Total	457	(346)	1 719

(1) In 2016, following the completion of the Squeeze-Out of the remaining Alcatel Lucent Securities, the Group launched actions to integrate the former Alcatel Lucent and Nokia operating models. In connection with these integration activities, the Group transferred certain intellectual property to its operations in the United States, recording a tax benefit and additional deferred tax assets of EUR 348 million. In addition, the Group elected to treat the Acquisition of Alcatel Lucent's operations in the United States as an asset purchase for United States tax purposes. The impact of this election was to utilize or forfeit existing deferred tax assets and record new deferred tax assets with a longer amortization period than the life of those forfeited assets. As a result of this, EUR 91 million additional deferred tax assets were recorded in 2016.

(2) In 2016, relates primarily to tax losses and temporary differences in France.

(3) In 2014, relates primarily to tax losses, unused tax credits and temporary differences in Finland for which a deferred tax asset was re-recognized.

Notes to consolidated financial statements continued

Income tax liabilities and assets include a net EUR 495 million liability (EUR 394 million in 2015) 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. The Group has on-going tax audits in various jurisdictions, including India, Germany, Finland and Canada. The Group'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.

In 2013, the tax authorities in India commenced an investigation into withholding tax in respect of payments by Nokia India Private Limited to Nokia Corporation for the supply of operating software. Subsequently, the authorities extended the investigation to other related tax consequences and issued orders and made certain assessments. The Group has denied all such allegations and continues defending itself in various Indian litigation proceedings, under both Indian and international law, while extending its full cooperation to the authorities.

Through the Acquisition of Alcatel Lucent, the Group has an on-going tax audit in Germany relating to the disposal of former Alcatel Lucent railway signaling business in 2006 to Thales. In the tax audit report issued in 2012, the tax authorities have claimed EUR 140 million before interest and penalties (being EUR 202 million including interest and penalties as of December 31, 2016). The case is pending with the tax court of Baden-Wuerttemberg in Stuttgart, Germany. The Group has not recognized a liability for this on-going tax audit as it is considered more likely than not that the Group will not have to pay these taxes.

Deferred tax assets and liabilities

EURm	2016			2015		
	Deferred tax assets	Deferred tax liabilities	Net balance	Deferred tax assets	Deferred tax liabilities	Net balance
Tax losses carried forward and unused tax credits	1 428	–		916	–	
Undistributed earnings	–	(67)		–	(15)	
Intangible assets and property, plant and equipment	3 713	(501)		1 321	(154)	
Defined benefit pension assets	3	(1 334)		1	(9)	
Other non-current assets	19	(52)		4	(12)	
Inventories	154	(3)		85	(6)	
Other current assets	81	(66)		43	(41)	
Defined benefit pension and other post-retirement liabilities	1 478	(29)		154	(3)	
Other non-current liabilities	12	(2)		1	(2)	
Provisions	249	(6)		106	(3)	
Other current liabilities	307	(56)		191	(33)	
Other temporary differences	16	(46)		29	–	
Total before netting	7 460	(2 162)	5 298	2 851	(278)	2 573
Netting of deferred tax assets and liabilities	(1 759)	1 759	–	(217)	217	–
Total after netting(1)	5 701	(403)	5 298	2 634	(61)	2 573

(1) The increase, especially in deferred tax assets and liabilities relating to intangible assets and property, plant and equipment; and defined benefit pension assets and defined benefit pension and other post-retirement liabilities, is primarily due to the Acquisition of Alcatel Lucent.

Movements in the net deferred tax balance during the year:

EURm	2016	2015
As of January 1	2 573	2 688
Recognized in income statement, Continuing operations	991	(88)
Recognized in income statement, Discontinued operations	(2)	147
Recognized in other comprehensive income	(255)	(114)
Recognized in equity	(5)	5
Acquisitions through business combinations and disposals	1 914	(74)
Translation differences	82	9
As of December 31	5 298	2 573

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	2016	2015
Temporary differences	2 214	334
Tax losses carried forward	18 706	1 488
Tax credits	32	21
Total(1)	20 952	1 843

(1) In 2016, the increase is primarily due to the Acquisition of Alcatel Lucent.

The majority of the unrecognized temporary differences and tax losses relate to France. Based on the pattern of losses in the past years and in the absence of convincing other evidence of sufficient taxable profit in the future years, it is uncertain whether these deferred tax assets can be utilized in the foreseeable future. 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.

The recognition of the remaining deferred tax assets is supported by offsetting deferred tax liabilities, earnings history and profit projections in the relevant jurisdictions. As of December 31, 2016 the majority of recognized net deferred tax assets relate to unused tax losses, tax credits and deductible temporary differences in the United States of EUR 2.5 billion (EUR 0.1 billion in 2015) and Finland of EUR 2.2 billion (EUR 2.0 billion in 2015). Based on the recent years' profitability in the United States and Finland, as well as the latest forecasts of future financial performance, the Group has been able to establish a pattern of sufficient tax profitability in the United States and Finland to conclude that it is probable that it will be able to utilize the tax losses, tax credits and deductible temporary differences in the foreseeable future. In 2016, the Group incurred an accounting loss in Finland due to significant integration and restructuring costs following the Acquisition of Alcatel Lucent, which may delay the utilization of these tax attributes in Finland.

Expiry of tax losses carried forward and unused tax credits:

EURm	2016			2015		
	Recognized	Unrecognized	Total	Recognized	Unrecognized	Total
Tax losses carried forward						
Within 10 years	1 853	1 681	3 534	1 742	1 171	2 913
Thereafter	79	17	96	174	–	174
No expiry	1 878	17 008	18 886	280	317	597
Total	3 810	18 706	22 516	2 196	1 488	3 684
Tax credits						
Within 10 years	395	23	418	434	14	448
Thereafter	94	–	94	42	–	42
No expiry	66	9	75	–	7	7
Total	555	32	587	476	21	497

The Group has undistributed earnings of EUR 1 074 million (EUR 769 million in 2015) for which a deferred tax liability has not been recognized as these earnings will not be distributed in the foreseeable future.

Notes to consolidated financial statements continued

13. Earnings per share

	2016 EURm	2015 EURm	2014 EURm
Basic			
(Loss)/profit for the year attributable to equity holders of the parent			
Continuing operations	(751)	1 192	2 710
Discontinued operations	(15)	1 274	752
Total	(766)	2 466	3 462
Diluted			
Effect of profit adjustments			
Profit adjustment relating to Alcatel Lucent American Depositary Shares	(8)	—	—
Elimination of interest expense, net of tax, on convertible bonds, where dilutive	—	36	60
Total effect of profit adjustments	(8)	36	60
(Loss)/profit attributable to equity holders of the parent adjusted for the effect of dilution			
Continuing operations	(759)	1 228	2 770
Discontinued operations	(15)	1 274	752
Total	(774)	2 502	3 522
	000s shares	000s shares	000s shares
Basic			
Weighted average number of shares in issue	5 732 371	3 670 934	3 698 723
Diluted			
Effect of dilutive shares			
Effect of dilutive equity-based share incentive programs			
Restricted shares and other	—	4 253	14 419
Performance shares	—	3 179	1 327
Stock options	—	1 971	3 351
Total effect of dilutive equity-based share incentive programs	—	9 403	19 097
Effect of other dilutive shares			
Alcatel Lucent American Depositary Shares	8 746	—	—
Assumed conversion of convertible bonds	—	268 975	413 782
Total effect of other dilutive shares	8 746	268 975	413 782
Total effect of dilutive shares	8 746	278 378	432 879
Adjusted weighted average number of shares	5 741 117	3 949 312	4 131 602
Earnings per share attributable to equity holders of the parent	EUR	EUR	EUR
Basic earnings per share			
Continuing operations	(0.13)	0.32	0.73
Discontinued operations	0.00	0.35	0.20
(Loss)/profit for the year	(0.13)	0.67	0.94
Diluted earnings per share			
Continuing operations	(0.13)	0.31	0.67
Discontinued operations	0.00	0.32	0.18
(Loss)/profit for the year	(0.13)	0.63	0.85

Basic earnings per share is calculated by dividing the profit/loss attributable to equity holders of the parent by the weighted average number of shares outstanding during the year, excluding treasury shares. Diluted earnings per share is calculated by adjusting the profit/loss attributable to equity holders of the parent to eliminate the interest expense of dilutive convertible bonds and other equity instruments; and by adjusting the weighted average number of shares outstanding with the dilutive effect of stock options, restricted shares and performance shares outstanding during the period as well as the assumed conversion of convertible bonds and other equity instruments.

5 million restricted shares are outstanding (none in 2015 and 2014) that could potentially have a dilutive impact in the future but are excluded from the calculation as they are determined to be anti-dilutive.

10 million performance shares are outstanding (none in 2015 and 2014) that could potentially have a dilutive impact in the future but are excluded from the calculation as they are determined to be anti-dilutive. In addition, 4 million performance shares (4 million in 2015 and fewer than 1 million in 2014) have been excluded from the calculation of diluted shares as contingency conditions have not been met.

Stock options equivalent to fewer than 1 million shares (fewer than 1 million shares in 2015 and 2 million in 2014) have been excluded from the calculation of diluted shares as they are determined to be anti-dilutive.

In 2014, convertible bonds issued to Microsoft in September 2013 were fully redeemed as a result of the closing of the Sale of the D&S Business. 116 million potential shares were included in the calculation of diluted shares to reflect the part-year effect of these convertible bonds.

In 2015, the Group exercised its option to redeem the EUR 750 million convertible bonds at their original amount plus accrued interest. Virtually all bondholders elected to convert their convertible bonds into Nokia shares before redemption. 269 million potential shares have been included in the calculation of diluted shares to reflect the part-year effect of these convertible bonds. In 2014, the conversion price was increased and 298 million potential shares were included in the calculation of diluted shares as they were determined to be dilutive. Voluntary conversion of the entire bond would have resulted in the issue of 307 million shares in 2014.

On May 9, 2016, the Group acquired 107 775 949 Alcatel Lucent shares from JPMorgan Chase Bank N.A., as depositary, pursuant to the share purchase agreement announced on March 17, 2016. These shares represent Alcatel Lucent shares that remained in the Alcatel Lucent American Depositary Receipts program after the cancellation period and following the program's termination on April 25, 2016. On May 10, 2016 the Group registered with the Finnish Trade Register 59 276 772 new Nokia shares issued to the Alcatel depositary in settlement of the transaction. 9 million potential shares have been included in the calculation of diluted shares from March 16, 2016 to reflect the part-year effect of these shares, and were included in the calculation as dilutive shares until the registration date.

14. Intangible assets

EURm	Goodwill	Other	Total
Acquisition cost as of January 1, 2015	5 770	5 646	11 416
Translation differences	350	382	732
Additions	—	26	26
Acquisitions through business combinations	7	56	63
Disposals and retirements(1)	(4 982)	(2 973)	(7 955)
Acquisition cost as of December 31, 2015	1 145	3 137	4 282
Accumulated amortization and impairment charges as of January 1, 2015	(3 207)	(5 296)	(8 503)
Translation differences	—	(350)	(350)
Disposals and retirements(1)	2 299	2 934	5 233
Amortization	—	(102)	(102)
Accumulated amortization and impairment charges as of December 31, 2015	(908)	(2 814)	(3 722)
Net book value as of January 1, 2015	2 563	350	2 913
Net book value as of December 31, 2015	237	323	560
Acquisition cost as of January 1, 2016	1 145	3 137	4 282
Translation differences	129	424	553
Additions	—	62	62
Acquisitions through business combinations	5 358	5 781	11 139
Disposals and retirements(2)	—	(22)	(22)
Acquisition cost as of December 31, 2016	6 632	9 382	16 014
Accumulated amortization and impairment charges as of January 1, 2016	(908)	(2 814)	(3 722)
Translation differences	—	(325)	(325)
Disposals and retirements(2)	—	9	9
Amortization	—	(1 016)	(1 016)
Accumulated amortization and impairment charges as of December 31, 2016	(908)	(4 146)	(5 054)
Net book value as of January 1, 2016	237	323	560
Net book value as of December 31, 2016	5 724	5 236	10 960

(1) Included goodwill with acquisition cost of EUR 4 982 million and accumulated impairment of EUR 2 299 million and other intangible assets with acquisition cost of EUR 2 892 million and accumulated amortization of EUR 2 853 million disposed as part of the Sale of the HERE Business.

(2) Includes impairment charges of EUR 9 million. Refer to Note 16, Impairment.

Net book value of other intangible assets by type of asset:

EURm	2016	2015
Customer relationships	2 765	132
Technologies	1 786	126
Tradenames and trademarks	308	9
Other	377	56
Total	5 236	323

The remaining amortization periods are approximately one to nine years for customer relationships, one to seven years for developed technology and five to seven years for tradenames and trademarks.

Notes to consolidated financial statements continued

15. Property, plant and equipment

EURm	Buildings and constructions	Machinery and equipment	Other	Assets under construction	Total
Acquisition cost as of January 1, 2015	438	1 854	41	19	2 352
Translation differences	32	134	1	–	167
Additions	62	186	15	16	279
Acquisitions through business combinations	2	5	–	–	7
Reclassifications	12	4	–	(16)	–
Disposals and retirements(1)	(119)	(437)	(16)	(4)	(576)
Acquisition cost as of December 31, 2015	427	1 746	41	15	2 229
Accumulated depreciation as of January 1, 2015	(180)	(1 434)	(22)	–	(1 636)
Translation differences	(18)	(114)	(1)	–	(133)
Disposals and retirements(1)	71	365	16	–	452
Depreciation	(47)	(168)	(2)	–	(217)
Accumulated depreciation as of December 31, 2015	(174)	(1 351)	(9)	–	(1 534)
Net book value as of January 1, 2015	258	420	19	19	716
Net book value as of December 31, 2015	253	395	32	15	695
Acquisition cost as of January 1, 2016	427	1 746	41	15	2 229
Transfers to assets held for sale	(47)	–	–	–	(47)
Translation differences	1	(15)	2	–	(12)
Additions	65	361	3	87	516
Acquisitions through business combinations	587	674	68	84	1 413
Reclassifications	20	75	2	(97)	–
Disposals and retirements	(54)	(148)	(2)	–	(204)
Acquisition cost as of December 31, 2016	999	2 693	114	89	3 895
Accumulated depreciation as of January 1, 2016	(174)	(1 351)	(9)	–	(1 534)
Transfers to assets held for sale	5	–	–	–	5
Translation differences	1	13	–	–	14
Disposals and retirements	46	133	–	–	179
Depreciation	(94)	(480)	(4)	–	(578)
Accumulated depreciation as of December 31, 2016	(216)	(1 685)	(13)	–	(1 914)
Net book value as of January 1, 2016	253	395	32	15	695
Net book value as of December 31, 2016	783	1 008	101	89	1 981

(1) Included buildings and constructions with acquisition cost of EUR 81 million and accumulated depreciation of EUR 35 million, machinery and equipment with acquisition cost of EUR 305 million and accumulated depreciation of EUR 239 million and assets under construction with acquisition cost of EUR 3 million disposed as part of the Sale of the HERE Business.

In 2014, the tax authorities in India placed a lien which prohibited the Group from transferring the mobile devices-related facility in Chennai to Microsoft as part of the Sale of the D&S Business.

16. Impairment

Goodwill

Following the Acquisition of Alcatel Lucent on January 4, 2016, the Group adopted an operational and reporting structure consisting of two businesses: Nokia's Networks business and Nokia Technologies, and three reportable segments for financial reporting purposes: Ultra Broadband Networks and IP Networks and Applications within Nokia's Networks business, and Nokia Technologies. Based on the current operational and reporting structure, the Group allocated goodwill to the operating segments within Nokia's Networks business and to the Withings cash generating unit within Nokia Technologies corresponding to groups of cash generating units ("group of CGUs") and cash generating unit ("CGU"), respectively. The goodwill allocation reflects the lowest level at which goodwill is monitored for internal management purposes; and is allocated to the group of CGUs or the CGU that is expected to benefit from the synergies of the combination.

Allocation of goodwill

The following table presents the allocation of goodwill to groups of CGUs and the CGU as of the annual impairment testing date October 1, 2016:

EURm	2016	2015
Mobile Networks	2 298	
Fixed Networks	896	
IP/Optical Networks	1 970	
Applications & Analytics	240	
Withings (Nokia Technologies)	141	
Global Services		124
Radio Access Networks (Mobile Broadband)		115

Recoverable amounts

The recoverable amounts of the groups of CGUs and the CGU were based on fair value less costs of disposal that was determined using a level 3 fair value measurement based on 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 five years.

Five additional years of cash flow projections subsequent to the explicit forecast period 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 industry and economies in which the groups of CGUs and the CGU operate. The discount rates reflect current assessments of the time value of money and relevant market risk premiums reflecting risks and uncertainties for which the future cash flow estimates have not been adjusted. Other key variables in future cash flow projections include assumptions on estimated sales growth, gross margin and operating margin. All cash flow projections are consistent with external sources of information, wherever possible.

The key assumptions applied in the impairment testing analysis for the groups of CGUs and the CGU:

Key assumption %	2016	2015	2016	2015
	Terminal growth rate		Post-tax discount rate	
Mobile Networks	0.9		9.2	
Fixed Networks	0.9		8.6	
IP/Optical Networks	1.4		8.9	
Applications & Analytics	1.8		9.0	
Withings (Nokia Technologies)	2.1		12.7	
Global Services		1.0		8.7
Radio Access Networks (Mobile Broadband)		1.0		9.2

Notes to consolidated financial statements continued

Sensitivity analysis

The Group allocated a significant proportion of the goodwill arising from the Acquisition of Alcatel Lucent to the IP/Optical Networks group of CGUs, which is comprised mainly of businesses acquired in the acquisition. As a result, the fair value of the IP/Optical Networks group of CGUs corresponds closely to its respective carrying amount.

The results of the impairment testing indicate significant headroom for each group of CGUs and CGU, except for the IP/Optical Networks group of CGUs, where the recoverable amount exceeds its carrying amount by approximately EUR 1 200 million. Taken in isolation, the following changes would cause the recoverable amount of IP/Optical Networks group of CGUs to equal its carrying amount:

- Increase in discount rate from 8.9% to 10.7%.
- Reduction in operational profitability in the terminal year by 40%, which is equal to the decrease in the operating profit of EUR 331 million.

Other non-current assets

Impairment charges by asset category:

EURm	2016	2015	2014
Other intangible assets	9	—	—
Available-for-sale investments	116	11	15
Total	125	11	15

Other intangible assets

The Group recognized an impairment charge of EUR 9 million following the discontinuation of certain technology-related assets acquired with Mesaplexx Pty Ltd. The impairment charge is recorded in other operating expenses.

Available-for-sale investments

The Group recognized an impairment charge of EUR 116 million (EUR 11 million in 2015 and EUR 15 million in 2014) primarily related to the performance of certain private funds investing in IPR that are included in non-current available-for-sale equity investments at cost less impairment. These charges are recorded in other expenses and financial income and expenses.

17. Inventories

EURm	2016	2015
Raw materials, supplies and other	268	102
Work in progress	1 159	404
Finished goods	1 079	508
Total	2 506	1 014

The cost of inventories recognized as an expense during the year and included in the cost of sales is EUR 7 636 million (EUR 3 132 million in 2015 and EUR 3 156 million in 2014).

Movements in allowances for excess and obsolete inventory for the years ended December 31:

EURm	2016	2015	2014
As of January 1	195	204	178
Charged to income statement	354	71	107
Deductions ⁽¹⁾	(93)	(80)	(81)
As of December 31	456	195	204

(1) Deductions include utilization and releases of allowances.

18. Allowances for doubtful accounts

Movements in allowances for doubtful accounts for the years ended December 31:

EURm	2016	2015	2014
As of January 1	62	103	124
Transfer to Discontinued operations	—	(7)	—
Charged to income statement	126	13	24
Deductions(1)	(20)	(47)	(45)
As of December 31	168	62	103

(1) Deductions include utilization and releases of allowances.

19. Prepaid expenses and accrued income

Non-current assets

EURm	2016	2015
R&D tax credits and other indirect tax receivables	254	—
Other	74	51
Total	328	51

Current assets

EURm	2016	2015
Social security, R&D tax credits, VAT and other indirect taxes	560	258
Deposits	118	83
Accrued revenue	101	21
Divestment-related receivables	90	160
Other	427	227
Total	1 296	749

Notes to consolidated financial statements continued

20. Shares of the Parent Company

Shares and share capital

Nokia Corporation ("Parent Company") has one class of shares. Each share entitles the holder to one vote at General Meetings. As of December 31, 2016, the share capital of Nokia Corporation is EUR 245 896 461.96 and the total number of shares issued is 5 836 055 012. As of December 31, 2016, the total number of shares includes 115 551 878 shares owned by Group companies representing 2.0% of share capital and total voting rights. Under the Nokia Articles of Association, Nokia Corporation does not have minimum or maximum share capital or share par value.

Authorizations

Authorization to issue shares and special rights entitling to shares

At the Annual General Meeting held on May 5, 2015, the shareholders authorized the Board of Directors to issue a maximum of 730 million shares through one or more issues of shares or special rights entitling to shares. The Board of Directors was authorized to issue either new shares or shares held by the Parent Company. The authorization included the right for the Board of Directors to resolve on all the terms and conditions of such share and special rights issuances, including issuance in deviation from the shareholders' pre-emptive rights. The authorization may be used to develop the Parent Company's capital structure, diversify the shareholder base, finance or carry out acquisitions or other arrangements, settle the Parent Company's equity-based incentive plans, or for other purposes resolved by the Board of Directors. The authorization that would have been effective until November 5, 2016 was terminated by a resolution of Annual General Meeting on June 16, 2016.

At the Extraordinary General Meeting held on December 2, 2015, the shareholders authorized the Board of Directors to issue, in deviation from the shareholders' pre-emptive right, a maximum of 2 100 million shares through one or more share issues. The authorization includes the right for the Board of Directors to resolve on all the terms and conditions of such share issuances. The authorization may be used to issue Parent Company shares to the holders of Alcatel Lucent shares, American Depositary Shares and convertible bonds as well as to beneficiaries of Alcatel Lucent employee equity compensation arrangements for the purpose of implementing the transaction with Alcatel Lucent, including the consummation of the public exchange offers made to Alcatel Lucent shareholders as well as other transactions contemplated by the memorandum of understanding between the Group and Alcatel Lucent, and/or otherwise to effect the combination. The authorization is effective until December 2, 2020.

In 2016, under the authorization held by the Board of Directors, the Parent Company issued in deviation from the shareholders' pre-emptive right to subscription 1 842 158 031 shares in exchange for the Alcatel Lucent ordinary shares, American Depositary Shares and OCEANE convertible bonds to effect the business combination with Alcatel Lucent. The number of shares issued consisted of 1 831 136 063 new shares and 11 021 968 shares held by Group companies. On November 2, 2016 the Group reached 100% ownership of Alcatel Lucent. Refer to Note 5, Acquisitions.

At the Annual General Meeting held on June 16, 2016, the shareholders authorized the Board of Directors to issue a maximum of 1 150 million shares through one or more issues of shares or special rights entitling to shares. The Board of Directors is authorized to issue either new shares or shares held by the Parent Company. The authorization included the right for the Board of Directors to resolve on all the terms and conditions of such share and special rights issuances, including issuance in deviation from the shareholders' pre-emptive rights. The authorization may be used to develop the Parent Company's capital structure, diversify the shareholder base, finance or carry out acquisitions or other arrangements, settle the Parent Company's equity-based incentive plans, or for other purposes resolved by the Board of Directors. The authorization is effective until December 16, 2017.

In 2016, under the authorization held by the Board of Directors, the Parent Company issued 3 408 437 treasury shares to employees, including certain members of the Group Leadership Team, as settlement under equity-based incentive plans. The shares were issued without consideration and in accordance with the Plan rules.

In 2016, the Parent Company issued 1 033 265 new shares following the holders of stock options issued in 2011 and 2012 exercising their option rights.

As of December 31, 2016, the Board of Directors had no other authorizations to issue shares, convertible bonds, warrants or stock options.

Other authorizations

At the Annual General Meeting held on May 5, 2015, the shareholders authorized the Board of Directors to repurchase a maximum of 365 million shares. The amount corresponded to less than 10% of the total number of Parent Company's shares. The shares may be repurchased in order to optimize the capital structure of the Parent Company, in order to finance or carry out acquisitions or other arrangements, to settle the Parent Company's equity-based incentive plans or to be transferred for other purposes. The authorization that would have been effective until November 5, 2016 was terminated by a resolution of the Annual General Meeting on June 16, 2016.

At the Annual General Meeting held on June 16, 2016, the shareholders authorized the Board of Directors to repurchase a maximum of 575 million shares. The amount corresponds to less than 10% of the total number of Parent Company's shares. The shares may be repurchased in order to optimize the capital structure of the Parent Company and are expected to be cancelled. In addition, the shares may be repurchased in order to finance or carry out acquisitions or other arrangements, to settle the Parent Company's equity-based incentive plans or to be transferred for other purposes. The authorization is effective until December 16, 2017.

In 2016, under the authorization held by the Board of Directors and in line with the capital structure optimization program, the Parent Company repurchased 54 296 182 shares representing approximately 0.9% of share capital and total voting rights. The price paid for the shares was based on the current market price of the Nokia share on the securities market at the time of the repurchase.

21. Fair value and other reserves

EURm	Translation differences	Pension remeasurements	Hedging reserve	Available-for-sale Investments
As of January 1, 2014	434	(131)	30	181
Foreign exchange translation differences	628	—	—	—
Net investment hedging losses	(153)	—	—	—
Remeasurements of defined benefit plans	—	(179)	—	—
Net fair value (losses)/gains	—	—	(10)	117
Transfer to income statement	197	—	(20)	(14)
Disposal of businesses	—	46	2	—
Movement attributable to non-controlling interests	(7)	—	—	—
As of December 31, 2014	1 099	(264)	2	284
Foreign exchange translation differences	672	—	—	—
Net investment hedging losses	(207)	—	—	—
Remeasurements of defined benefit plans	—	84	—	—
Net fair value (losses)/gains	—	—	(53)	225
Transfer to income statement	(1 268)	—	49	(131)
Disposal of businesses	—	8	—	—
Movement attributable to non-controlling interests	(4)	—	—	—
As of December 31, 2015	292	(172)	(2)	378
Foreign exchange translation differences	265	—	—	—
Net investment hedging losses	(83)	—	—	—
Remeasurements of defined benefit plans	—	343	—	—
Net fair value losses	—	—	(13)	(10)
Transfer to income statement	(14)	—	25	(63)
Acquisition of non-controlling interests	(15)	(2)	—	—
Movement attributable to non-controlling interests	38	4	—	—
As of December 31, 2016	483	173	10	305

Translation differences consist of translation differences arising from translation of foreign Group companies' assets and liabilities into euro, the presentation currency of the consolidated financial statements, as well as gains and losses related to hedging of net investments in foreign operations. On disposal of all or a part of a foreign Group company, the cumulative amount of translation differences and related accumulated changes in fair value of qualifying net investment hedges are recognized as income or expense on the consolidated income statement when the gain or loss on disposal is recognized. Refer to Note 2, Significant accounting policies.

The Group has defined benefit plans. Actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions for these defined benefit plans are charged or credited to the pension remeasurements reserve. Refer to Note 2, Significant accounting policies and Note 27, Pensions and other post-employment benefits.

The Group applies hedge accounting on certain forward foreign exchange contracts that are designated as cash flow hedges. The change in fair value that reflects the change in spot exchange rates is deferred to the hedging reserve to the extent that the hedge is effective. Refer to Note 2, Significant accounting policies.

The Group invests a portion of cash needed to cover the projected cash needs of its ongoing business operations in highly liquid, interest-bearing investments and certain equity instruments. Changes in the fair value of these available-for-sale investments are recognized in the fair value and other reserves as part of other comprehensive income, with the exception of interest calculated using the effective interest method and foreign exchange gains and losses on current available-for-sale investments recognized directly in the consolidated income statement. Refer to Note 2, Significant accounting policies.

Notes to consolidated financial statements continued

22. Other comprehensive income

EURm	2016			2015			2014		
	Gross	Tax	Net	Gross	Tax	Net	Gross	Tax	Net
Pension remeasurements									
Remeasurements of defined benefit plans	613	(269)	344	112	(28)	84	(275)	96	(179)
Net change during the year	613	(269)	344	112	(28)	84	(275)	96	(179)
Translation differences									
Exchange differences on translating foreign operations	265	–	265	673	–	673	628	–	628
Transfer to income statement	(14)	–	(14)	(1 727)	–	(1 727)	192	–	192
Net change during the year	251	–	251	(1 054)	–	(1 054)	820	–	820
Net investment hedging									
Net investment hedging losses	(103)	20	(83)	(260)	53	(207)	(187)	34	(153)
Transfer to income statement	–	–	–	582	(123)	459	20	(15)	5
Net change during the year	(103)	20	(83)	322	(70)	252	(167)	19	(148)
Cash flow hedges									
Net fair value losses	(16)	3	(13)	(66)	13	(53)	(5)	(5)	(10)
Transfer to income statement	30	(5)	25	61	(12)	49	(25)	5	(20)
Net change during the year	14	(2)	12	(5)	1	(4)	(30)	–	(30)
Available-for-sale Investments									
Net fair value (losses)/gains	(9)	(1)	(10)	246	(21)	225	120	(3)	117
Transfer to income statement on impairment	25	(4)	21	11	–	11	15	–	15
Transfer to income statement on disposal	(91)	7	(84)	(144)	2	(142)	(29)	–	(29)
Net change during the year	(75)	2	(73)	113	(19)	94	106	(3)	103
Other (decrease)/increase, net	(6)	–	(6)	2	–	2	40	–	40
Total	694	(249)	445	(510)	(116)	(626)	494	112	606

23. Interest-bearing liabilities

Issuer/borrower	Instrument	Currency	Nominal (million)	Final maturity	Carrying amount EURm	
					2016	2015
Nokia Corporation	Revolving Credit Facility ⁽¹⁾	EUR	1 579	June 2019	—	—
Nokia Corporation	6.625% Senior Notes	USD	500	May 2039	482	467
Alcatel-Lucent USA Inc.	6.45% Senior Notes	USD	1 360	March 2029	1 306	—
Alcatel-Lucent USA Inc.	6.5% Senior Notes	USD	300	January 2028	287	—
Alcatel Lucent SA	0.125% OCEANE Convertible Bond	EUR	—	January 2020	—	—
Nokia Corporation	5.375% Senior Notes	USD	1 000	May 2019	961	940
Nokia Corporation	6.75% Senior Notes	EUR	500	February 2019	527	539
Alcatel Lucent SA	0% OCEANE Convertible Bond	EUR	—	January 2019	—	—
Nokia Corporation and various subsidiaries	Other liabilities ⁽²⁾				464	128
Total					4 027	2 074

(1) In June 2016, the Group exercised its option to increase the size of the EUR 1 500 million revolving credit facility to EUR 1 579 million and to extend the maturity date from June 2018 to June 2019. The facility has a remaining one-year extension option, no financial covenants and remains undrawn.

(2) Includes liabilities related to the French R&D tax credits (Crédits d'impôt Recherche) of EUR 132 million that have been sold to banks on a recourse basis and hence remain on the consolidated statement of financial position.

Transactions relating to borrowings acquired as part of the Acquisition of Alcatel Lucent

As part of the public exchange offer to acquire Alcatel Lucent 2018 OCEANE, 2019 OCEANE and 2020 OCEANE convertible bonds with nominal amounts of EUR 381 million, EUR 238 million and EUR 293 million respectively, were tendered for exchange into Nokia shares. As a result, less than 15% of the 2018 OCEANE convertible bonds remained outstanding, and the Group caused Alcatel Lucent SA to redeem at par value plus accrued interest, all of the outstanding 2018 OCEANE convertible bonds pursuant to the terms and conditions of the bonds. Subsequently during 2016 the remaining outstanding 2019 OCEANE and 2020 OCEANE convertible bonds with nominal amounts EUR 402 million and EUR 136 million respectively, were either put back, acquired in privately negotiated transactions, or acquired through the Public Buy-Out Offer followed by a Squeeze-Out for an aggregate cash payment of EUR 562 million. Refer to Note 5, Acquisitions.

In January 2016, Alcatel Lucent SA repaid its EUR 190 million 8.50% senior notes. In February, 2016, Alcatel-Lucent USA Inc. redeemed its USD 650 million 4.625% notes due July 2017, USD 500 million 8.875% notes due January 2020 and USD 700 million 6.750% notes due November 2020 in accordance with their respective terms and conditions. In February 2016, Alcatel Lucent SA terminated its EUR 504 million revolving credit facility. In March 2016, the Alcatel-Lucent Submarine Networks' credit facility of EUR 74 million was repaid.

All of the remaining borrowings are senior unsecured and have no financial covenants.

Notes to consolidated financial statements continued

24. Fair value of financial instruments

EURm	Carrying amounts					Fair value(1)	
	Current available-for-sale financial assets	Non-current available-for-sale financial assets	Financial instruments at fair value through profit or loss	Loans and receivables measured at amortized cost	Financial liabilities measured at amortized cost	Total	Total
2016							
Available-for-sale investments, carried at fair value		838				838	838
Available-for-sale investments, carried at cost less impairment		202				202	202
Other non-current financial assets			111	143		254	228
Accounts receivable				6 972		6 972	6 972
Other current financial assets			235	61		296	296
Investments at fair value through profit and loss, liquid assets			327			327	327
Available-for-sale investments, liquid assets carried at fair value	1 502					1 502	1 502
Cash and cash equivalents carried at fair value	7 497					7 497	7 497
Total financial assets	8 999	1 040	673	7 176	–	17 888	17 862
Long-term interest-bearing liabilities					3 657	3 657	3 821
Short-term interest-bearing liabilities					370	370	370
Other financial liabilities			250		34	284	284
Accounts payable					3 781	3 781	3 781
Total financial liabilities	–	–	250	–	7 842	8 092	8 256
2015							
Available-for-sale investments, carried at fair value		703				703	703
Available-for-sale investments, carried at cost less impairment		285				285	285
Other non-current financial assets				49		49	39
Accounts receivable				3 913		3 913	3 913
Other current financial assets			96	32		128	128
Investments at fair value through profit and loss, liquid assets			687			687	687
Available-for-sale investments, publicly quoted equity shares		16				16	16
Available-for-sale investments, liquid assets carried at fair value	2 167					2 167	2 167
Cash and cash equivalents carried at fair value	6 995					6 995	6 995
Total financial assets	9 162	1 004	783	3 994	–	14 943	14 933
Long-term interest-bearing liabilities					2 023	2 023	2 100
Short-term interest-bearing liabilities					51	51	51
Other financial liabilities			114		8	122	122
Accounts payable					1 910	1 910	1 910
Total financial liabilities	–	–	114	–	3 992	4 106	4 183

(1) The following fair value measurement methods are used for items not carried at fair value: the fair value is estimated to equal the carrying amount for available-for-sale investments carried at cost less impairment for which it is not possible to estimate fair value reliably. These assets are tested for impairment using a discounted cash flow analysis if events or changes in circumstances indicate that the carrying amounts may not be recoverable. The fair values of long-term interest-bearing liabilities are primarily based on quotes from third-party pricing services (level 2). The fair values of other assets and liabilities, including loans receivable 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. Refer to Note 2, Significant accounting policies.

Fair value hierarchy

Financial assets and liabilities recorded at fair value are categorized based on the amount of unobservable 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 quotes from third-party pricing services, and level 3 requiring most management judgment. At the end of each reporting period, the Group categorizes its financial assets and liabilities to appropriate level of fair value hierarchy.

Items measured at fair value on a recurring basis as of December 31:

	Instruments with quoted prices in active markets (level 1)	Valuation technique using observable data (level 2)	Valuation technique using non-observable data (level 3)	Total
EURm				
2016				
Available-for-sale investments, carried at fair value	–	164	674	838
Other current financial assets, derivatives(1)	–	235	–	235
Investments at fair value through profit and loss	–	438	–	438
Available-for-sale investments, liquid assets carried at fair value	–	1 502	–	1 502
Total assets	–	2 339	674	3 013
Other financial liabilities, derivatives(1)	–	236	14	250
Total liabilities	–	236	14	250
2015				
Available-for-sale investments, carried at fair value	–	15	688	703
Other current financial assets, derivatives(1)	–	96	–	96
Investments at fair value through profit and loss	–	687	–	687
Available-for-sale investments, publicly quoted equity shares	16	–	–	16
Available-for-sale investments, liquid assets carried at fair value	–	2 167	–	2 167
Total assets	16	2 965	688	3 669
Other financial liabilities, derivatives(1)	–	114	–	114
Total liabilities	–	114	–	114

(1) Refer to Note 25, Derivative financial instruments for the allocation between hedge accounted and non-hedge accounted derivatives.

The level 1 category includes financial assets and liabilities that are measured in whole by reference to published quotes in an active market. A financial instrument is regarded as quoted in an active market if quoted prices are readily and regularly available from an exchange, and those prices represent actual and regularly occurring market transactions on an arm's-length basis. This category includes only exchange traded products. Comparative presentation has been updated accordingly.

The level 2 category includes financial assets and liabilities measured using a valuation technique based on assumptions that are supported by prices from observable current market transactions. These include assets and liabilities with fair values based on quotes from third-party pricing services, financial assets with fair values based on broker quotes and assets that are valued using the Group's own valuation models whereby the material assumptions are market observable. The majority of listed bonds and other securities, over-the-counter derivatives and certain other products are included in this category.

The level 3 category includes a large number of investments in unlisted equities and unlisted venture funds, including investments managed by Nokia Growth Partners specializing in growth-stage investing and by BlueRun Ventures focusing on early-stage opportunities. The level 3 fair value 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 be affected by 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.

Notes to consolidated financial statements continued

The inputs generally considered in determining the fair value 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 level 3 investments are valued on a quarterly basis taking into consideration any changes, projections and assumptions, as well as any changes in economic and other relevant conditions. 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. Assumptions used by the managing partner due to the lack of observable inputs may impact the resulting fair value of individual investments, although no individual input has a significant impact on the total fair value of the level 3 investments.

Reconciliation of the opening and closing balances on level 3 financial assets and liabilities:

EURm	Level 3 financial assets and liabilities
As of January 1, 2015	556
Net gain in income statement	96
Net gain in other comprehensive income	83
Purchases	70
Sales	(146)
Other	29
As of December 31, 2015	688
Net gains in income statement	52
Net loss recorded in other comprehensive income	(48)
Acquisitions through business combination	(14)
Purchases	72
Sales	(101)
Other	11
As of December 31, 2016	660

The gains and losses from financial assets and liabilities categorized in level 3 are included in other operating income and expenses in cases where the investment and disposal objectives for these investments are business-driven. In other cases, the gains and losses are included in financial income and expenses.

25. Derivative financial instruments

EURm	Assets		Liabilities	
	Fair value(1)	Notional(2)	Fair value(1)	Notional(2)
2016				
Hedges on net investment in foreign subsidiaries				
Forward foreign exchange contracts	20	1 829	(1)	255
Cash flow hedges				
Forward foreign exchange contracts	12	382	(9)	185
Fair value hedges				
Interest rate swaps	42	300	—	—
Forward foreign exchange contracts	21	350	(51)	689
Firm commitments	34	633	(6)	311
Cash flow and fair value hedges(3)				
Cross-currency interest rate swaps	42	1 002	—	—
Derivatives not designated in hedge accounting relationships carried at fair value through profit and loss				
Forward foreign exchange contracts	61	3 777	(135)	7 526
Currency options bought	3	569	—	—
Interest rate swaps	—	—	(29)	329
Other derivatives	—	—	(5)	157
Total	235	8 842	(236)	9 452
2015				
Hedges on net investment in foreign subsidiaries				
Forward foreign exchange contracts	2	223	(5)	464
Currency options bought	—	106	—	—
Currency options sold	—	—	—	114
Cash flow hedges				
Forward foreign exchange contracts	4	844	(19)	880
Fair value hedges				
Interest rate swaps	52	301	—	—
Cash flow and fair value hedges(3)				
Cross-currency interest rate swaps	17	355	(5)	646
Derivatives not designated in hedge accounting relationships carried at fair value through profit and loss				
Forward foreign exchange contracts	17	2 117	(31)	2 296
Currency options bought	4	350	—	—
Currency options sold	—	—	—	48
Interest rate swaps	—	—	(50)	646
Other derivatives	—	—	(4)	37
Total	96	4 296	(114)	5 131

(1) Included in other financial assets and other financial liabilities in the consolidated statement of financial position.

(2) Includes the gross amount of all notional values for contracts that have not yet been settled or cancelled. 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 interest rate swaps have been designated partly as fair value hedges and partly as cash flow hedges.

Notes to consolidated financial statements continued

26. Share-based payment

The Group has several equity-based incentive programs for employees. The programs consist of performance share plans, restricted share plans and employee share purchase plans. New stock option plans are no longer granted, although the 2011 stock option plan remains in force. Both executives and other eligible employees participate in these programs. The equity-based incentive grants are generally conditional on continued employment as well as the fulfillment of the performance, service and other conditions determined in the relevant plan rules. The share-based payment expense for all equity-based incentive grants for Continuing operations amounts to EUR 130 million (EUR 67 million in 2015 and EUR 53 million in 2014).

Performance shares

In 2016, the Group administered four global performance share plans, the Performance Share Plans of 2013, 2014, 2015 and 2016. The performance shares represent a commitment by the Group to deliver Nokia shares to employees at a future point in time, subject to the fulfillment of predetermined performance criteria. In the Performance Share Plan of 2016, performance shares were granted with pre-defined performance criteria and included a minimum payout guarantee. As a result of the minimum payout defined in the terms and conditions of the 2016 Plan, the number of shares to be settled following the restriction period will start at 25% of the granted amount at target. The number of performance shares at target is the amount of performance shares granted to an individual that will be settled if the target performance with respect to performance criteria is achieved. Any additional payout beyond the minimum amount will be determined based on the financial performance against the established performance criteria during the two-year performance period. At maximum performance, the settlement amounts to two times the amount at target.

Global performance share plans as of December 31:

Plan	Performance shares outstanding at target	Confirmed payout (% of target)	Performance period	Restriction period ⁽¹⁾	Settlement year
2013	—	86	2013–2014	2015	2016
2014	10 247 152	126	2014–2015	2016	2017
2015	10 818 660	124	2015–2016	2017	2018
2016	22 351 738		2016–2017	2018	2019

(1) The restriction period will be no less than one year from the end of the performance period.

Performance criteria for the year ended December 31:

Performance criteria	Threshold performance EUR	Maximum performance EUR	Weight %
2016 Plan			
Average annual net sales ⁽¹⁾ 2016-2017	24 097 million	27 724 million	50
Average annual diluted ⁽¹⁾ EPS 2016-2017	0.23	0.34	50
2015 Plan⁽²⁾			
Annual net sales ⁽¹⁾ in 2015	11 892 million	14 144 million	25
Annual net sales ⁽¹⁾ in 2016	23 421 million	27 852 million	25
Average annual diluted ⁽¹⁾ EPS 2015-2016	0.18	0.29	50

(1) Excludes costs related to the Acquisition of Alcatel Lucent and related integration, goodwill impairment charges, intangible asset amortization and other purchase price fair value adjustments, restructuring and associated charges and certain other items.

(2) The performance criteria of the Performance Share Plan 2015 were modified in 2016 to reflect the new structure and size of the Group following the Sale of the HERE Business and the Acquisition of Alcatel Lucent. The net sales metric is weighted equally each year, instead of calculating an average over the two-year performance period due to significant difference between the metrics for Nokia in 2015 and the new combined company in 2016.

Until the Nokia shares are delivered, the participants do not have any shareholder rights, such as voting or dividend rights, associated with the performance shares. The performance share grants are generally forfeited if the employment relationship with the Group terminates prior to vesting.

Restricted shares

In 2016, the Group administered four global restricted share plans: the Restricted Share Plan 2013, 2014, 2015 and 2016. The vesting schedule for plans prior to the 2015 Plan was 36 months following the grant quarter. The vesting schedule for the 2015 and 2016 Plans introduce tranche vesting and vest in three equal tranches on the first, second and the third anniversary of the award subject to continued employment with the Group. Restricted shares are granted on a limited basis for exceptional purposes related to retention and recruitment of individuals deemed critical to the Group's future success. Until the Nokia shares are delivered, the participants do not have any shareholder rights, such as voting or dividend rights, associated with the restricted shares. The restricted share grants are generally forfeited if the employment relationship with the Group terminates prior to vesting of the applicable tranche or tranches.

Active share-based payment plans by instrument

	Performance shares outstanding at target ⁽¹⁾		Restricted shares outstanding ⁽¹⁾	
	Number of performance shares at target	Weighted average grant date fair value EUR ⁽²⁾	Number of restricted shares outstanding	Weighted average grant date fair value EUR ⁽²⁾
As of January 1, 2014	21 980 408		30 356 850	
Granted	13 934 730	6.07	1 013 466	5.62
Forfeited	(18 676 072)		(19 546 605)	
Vested	(5 000)		(4 228 306)	
As of December 31, 2014	17 234 066		7 595 405	
Granted	13 553 992	5.78	342 200	6.22
Forfeited	(7 859 208)		(3 880 221)	
Vested	—		(1 952 910)	
As of December 31, 2015	22 928 850		2 104 474	
Granted	23 110 479	4.70	5 406 682	4.73
Forfeited	(1 489 070)		(255 023)	
Vested	(1 132 709)		(1 286 596)	
As of December 31, 2016⁽³⁾	43 417 550		5 969 537	

(1) Includes performance and restricted shares granted under other than global equity plans.

(2) The fair values of performance and restricted shares are estimated based on the grant date market price of the Nokia share less the present value of dividends expected to be paid during the vesting period.

(3) Includes 10 247 152 performance shares for the Performance Share Plan 2014 and 521 685 Restricted Shares that vested on January 1, 2017.

Employee share purchase plan

The Group offers a voluntary Employee Share Purchase Plan to its employees. Employees make contributions from their salary to purchase Nokia shares on a monthly basis during a 12-month savings period. The Group intends to deliver one matching share for every two purchased shares the employee still holds as of the end of the Plan cycle. In 2016, 1 661 951 matching shares were issued as a settlement to the participants of the Employee Share Purchase Plan 2015 (140 436 matching shares issued in 2015). Additionally in 2016, according to the terms and conditions of the plan, the Group issued 20 free shares to the participants of the Employee Share Purchase Plan, being 601 408 shares in total.

Notes to consolidated financial statements continued

Legacy equity compensation programs

Stock options

In 2016, the Group administered two global stock option plans, the Stock Option Plans 2007 and 2011, approved by the shareholders at the Annual General Meeting in the year when the plan was launched. Stock option plans have not been granted since 2013 as compensation to Group employees. The Stock Option Plan 2007 lapsed on January 1, 2016.

Each stock option entitles the holder to subscribe for one new Nokia share. The stock options are non-transferable and may be exercised for shares only. Shares will be eligible for dividends for the financial year in which the share subscription takes place. Other shareholder rights will commence on the date on which the subscribed shares are entered in the Trade Register. The stock option grants are generally forfeited if the employment relationship with the Group is terminated.

Reconciliation of stock options outstanding and exercisable:

	Number of shares	Weighted average exercise price EUR	Weighted average share price EUR	Number of options exercisable	Weighted average exercise price EUR
Shares under option ⁽¹⁾					
As of January 1, 2014	28 000 192	4.47		4 339 341	9.66
Exercised	(56 623)	5.75	6.69		
Forfeited	(16 839 593)	3.39			
Expired	(3 759 953)	9.94			
As of December 31, 2014	7 344 023	4.81		1 913 537	10.43
Exercised	(1 242 381)	3.79	6.44		
Forfeited	(2 215 216)	2.48			
Expired	(246 140)	8.07			
As of December 31, 2015	3 640 286	4.67		2 318 911	5.97
Exercised	(832 900)	2.52	4.87		
Forfeited	(17 875)	2.57			
Expired	(1 188 490)	7.81			
As of December 31, 2016	1 601 021	3.34		1 197 771	3.56

(1) Includes stock options granted under other than global equity plans, excluding the 2012 Nokia Networks Equity Incentive Plan.

Nokia Networks equity incentive plan

In 2012, the Board of Nokia Siemens Networks established the Nokia Networks Equity Incentive Plan ("the Plan"), a share-based incentive program under which options for Nokia Solutions and Networks B.V. shares were granted to selected key employees and senior management. In 2015, 30% of the options became exercisable and the remaining 70% became exercisable in 2016. The exercise price of the options is based on a per share value on grant as determined for the purposes of the Plan. The options are accounted for as a cash-settled share-based payment liability as of December 31, 2016. The fair value of the liability is determined based on the estimated fair value of shares less the exercise price of the options on the reporting date. The total carrying amount of the Plan is EUR 9 million (EUR 73 million in 2015) and is included in accrued expenses and other liabilities in the consolidated statement of financial position.

Alcatel Lucent equity incentive plan

Following the Acquisition of Alcatel Lucent, plans previously granted to former Alcatel Lucent employees that remained outstanding and exercisable were transferred to the Group with original vesting terms and conditions. Multiple liquidity agreements were offered in limited circumstances as part of the transaction to support the delivery of specific awards at the point of vesting with settlement in Nokia shares. For the primary liquidity arrangement (applied to the 2015 performance share grant), the performance conditions are market-driven and the terms were modified to acknowledge the change from Alcatel Lucent share-related measure to Nokia share measure. All shares granted that are covered under the liquidity agreements are accounted for as replacement plans.

At the time of the Squeeze-Out, the remaining plans were modified to allow for the completion of the Squeeze-Out. Modifications to remaining outstanding share and option grants not already covered by liquidity agreements, included mandatory acceleration of unvested performance shares, and modification of plan terms for outstanding stock options that result in options delivered in cash rather than equity, keeping all other terms of the plan constant. The options are accounted for as a cash-settled share-based payment liability as of December 31, 2016. EUR 8 million was included in the total share-based compensation expense in the consolidated income statement in relation to these legacy Alcatel Lucent plans. The fair value of the liability is determined based on the estimated fair value of shares less the exercise price of the options on the reporting date. The total carrying amount of the liability is EUR 19 million and is included in accrued expenses and other liabilities in the consolidated statement of financial position.

27. Pensions and other post-employment benefits

The Group operates a number of post-employment plans in various countries including both defined contribution and defined benefit plans. Defined benefit plans expose the Group to actuarial risks such as investment risk, interest rate risk, and life expectancy risk. The characteristics and associated risks of the defined benefit plans vary depending on legal, fiscal, and economic requirements in each country. These characteristics and risks are further described below and relate to the plans included in Continuing operations.

The total net defined benefit liability is EUR 1 198 million (EUR 398 million in 2015) consisting of net pension and other post-employment benefit liabilities of EUR 5 000 million (EUR 423 million in 2015) and net pension and other post-employment benefit assets of EUR 3 802 million (EUR 25 million in 2015).

Defined benefit plans

The Group's most significant defined benefit pension plans are in the United States, Germany, and the United Kingdom. Together they account for 93% (80% in 2015) of the Group's total defined benefit obligation and 92% (81% in 2015) of the Group's total plan assets.

The defined benefit obligations, the fair value of plan assets, the effects of the asset ceiling and the net defined benefit balance as of December 31:

EURm	2016				2015			
	Defined benefit obligation	Fair value of plan assets	Effects of asset ceiling	Net defined benefit balance	Defined benefit obligation	Fair value of plan assets	Effects of asset ceiling	Net defined benefit balance
United States	(22 845)	22 880	(265)	(230)	(59)	57	–	(2)
Germany	(2 680)	1 160	–	(1 520)	(1 279)	980	–	(299)
United Kingdom	(1 265)	1 485	–	220	(128)	136	–	8
Other	(1 873)	2 245	(40)	332	(374)	278	(9)	(105)
Total	(28 663)	27 770	(305)	(1 198)	(1 840)	1 451	(9)	(398)

United States

The Group has significant defined benefit pension plans and a significant post-retirement welfare benefit plan ("Opeb"), providing post-retirement healthcare benefits and life insurance coverage, in the United States. The pension plans include both traditional service-based programs as well as cash-balance plans. The management plan for salaried, non-union member employees was closed to new entrants after December 31, 2007 and fully frozen as of December 31, 2009. The Group, then Alcatel Lucent, adopted a new cash-balance program for salaried, non-union member employees from January 1, 2015. The program was extended to all United States-based salaried employees, except the employees of Nokia Technologies, from January 1, 2017. For union-represented employees, the Group maintains two United States Occupational plans which are traditional service-based pension programs. The larger of the two, which represents 95% of the obligation, is a closed plan. Post-retirement welfare benefit plans are maintained for certain retired former employees. An agreement was made with the Communications Workers of America ("CWA") and the International Brotherhood of Electrical Workers ("IBEW") unions to continue to provide post-retirement healthcare benefits and life-insurance coverage for employees formerly represented by these two unions.

The defined benefit obligations, the fair value of plan assets, the effects of the asset ceiling and the net defined benefit balance as of December 31:

EURm	2016				2015			
	Defined benefit obligation	Fair value of plan assets	Effects of asset ceiling	Net defined benefit balance	Defined benefit obligation	Fair value of plan assets	Effects of asset ceiling	Net defined benefit balance
Pension benefits								
Management	(15 855)	16 861	(2)	1 004	(59)	57	–	(2)
Occupational	(3 528)	5 440	(263)	1 649	–	–	–	–
Supplemental	(401)	–	–	(401)	–	–	–	–
Total	(19 784)	22 301	(265)	2 252	(59)	57	–	(2)
Post-retirement benefits								
Health (non-union represented)	(126)	–	–	(126)	–	–	–	–
Health (formerly union represented)	(1 343)	270	–	(1 073)	–	–	–	–
Group life (non-union represented)	(1 040)	220	–	(820)	–	–	–	–
Group life (formerly union represented)	(551)	89	–	(462)	–	–	–	–
Other	(1)	–	–	(1)	–	–	–	–
Total	(3 061)	579	–	(2 482)	–	–	–	–

Notes to consolidated financial statements continued

Germany

The Group maintains two primary plans in Germany which cover the majority of active employees: the cash balance plan Beitragsorientierter Altersversorgungs Plan ("BAP") and a similar cash balance program 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 plan is the NSN Pension Trust e.V. The funding vehicle for the former Alcatel Lucent cash balance plan is the Alcatel SEL Unterstützungs-GmbH. The trusts are legally separate from the Group and manage the plan assets in accordance with the respective trust agreements.

All other plans have been previously frozen 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. The risks specific to the German defined benefit plans are related to changes in mortality of covered members and return on investment on plan assets.

United Kingdom

The Group has three plans in the United Kingdom. The defined benefit for the legacy Nokia employees is divided into two sections: the money purchase section and the final salary section, both being closed to future contributions and accruals as of April 30, 2012. Individual benefits are generally dependent on eligible compensation levels and years of service for the defined benefit section of the plan and on individual investment choices for the defined contribution section of the plan. The funding vehicle for the pension plan is the NSN Pension Plan that is run on a trust basis. The other two defined benefit pension plans are the Alcatel Pension Plan and the Lucent Technologies Retirement Benefits Plan. Both plans were closed to new entrants in 2002 and 2001, respectively, although active employees still accrue benefits. These plans are both final salary-based programs.

Impact on the consolidated financial statements

Movements in the defined benefit obligation, fair value of plan assets and the impact of the asset ceiling

The movements in the present value of the defined benefit obligation for the years ended December 31:

EURm	2016				2015		
	United States pension	United States Opeb	Other pension	Total	United States pension	Other pension	Total
As of January 1	(58)	–	(1 782)	(1 840)	(71)	(1 813)	(1 884)
Transfer to Discontinued operations	–	–	–	–	16	–	16
Current service cost	(63)	–	(92)	(155)	–	(46)	(46)
Interest expense	(711)	(111)	(150)	(972)	(3)	(46)	(49)
Past service cost and gains on curtailments	(13)	–	11	(2)	–	5	5
Settlements	5	–	6	11	–	–	–
Total	(782)	(111)	(225)	(1 118)	(3)	(87)	(90)
Remeasurements:							
Gain/(loss) from change in demographic assumptions	79	15	(13)	81	1	(1)	–
(Loss)/gain from change in financial assumptions	(301)	(60)	(593)	(954)	2	112	114
Experience gain/(loss)	227	205	(74)	358	1	(1)	–
Total	5	160	(680)	(515)	4	110	114
Exchange differences	(615)	(91)	166	(540)	(6)	(29)	(35)
Contributions from plan participants	–	(124)	(20)	(144)	–	(16)	(16)
Benefit payments from plans	1 595	366	243	2 204	2	58	60
Acquisitions through business combinations	(19 919)	(3 243)	(3 431)	(26 593)	–	(4)	(4)
Other	(10)	(18)	(89)	(117)	–	(1)	(1)
Total	(18 949)	(3 110)	(3 131)	(25 190)	(4)	8	4
As of December 31	(19 784)	(3 061)	(5 818)	(28 663)	(58)	(1 782)	(1 840)

The movements in the fair value of plan assets for the years ended December 31:

EURm	2016				2015		
	United States pension	United States Opeb	Other pension	Total	United States pension	Other pension	Total
As of January 1	57	–	1 394	1 451	59	1 328	1 387
Transfer to Discontinued operations	–	–	–	–	(5)	–	(5)
Interest income	774	18	135	927	2	38	40
Administrative expenses and interest on asset ceiling	(19)	–	(1)	(20)	–	(1)	(1)
Settlements	(5)	–	(6)	(11)	–	–	–
Total	750	18	128	896	2	37	39
Remeasurements:							
Return on plan assets, excluding amounts included in interest income	947	6	387	1 340	(3)	5	2
Total	947	6	387	1 340	(3)	5	2
Exchange differences	709	16	(207)	518	6	22	28
Contributions:							
Employers	32	10	74	116	–	26	26
Plan participants	–	124	20	144	–	16	16
Benefit payments from plans	(1 595)	(366)	(164)	(2 125)	(2)	(45)	(47)
Acquisitions through business combinations	21 571	599	3 182	25 352	–	4	4
Other(1)	(170)	172	76	78	–	1	1
Total	20 547	555	2 981	24 083	4	24	28
As of December 31	22 301	579	4 890	27 770	57	1 394	1 451

(1) Includes Section 420 asset transfer between United States pension and United States Opeb.

The movements in the funded status for the years ended December 31:

EURm	2016				2015		
	United States pension	United States Opeb	Other pension	Total	United States pension	Other pension	Total
As of January 1	(1)	–	(388)	(389)	(12)	(485)	(497)
Transfer to Discontinued operations	–	–	–	–	11	–	11
Current service cost	(63)	–	(92)	(155)	–	(46)	(46)
Interest income/(expense)	44	(93)	(16)	(65)	(1)	(8)	(9)
Past service cost and gains on curtailments	(13)	–	11	(2)	–	5	5
Settlements	–	–	–	–	–	(1)	(1)
Total	(32)	(93)	(97)	(222)	(1)	(50)	(51)
Remeasurements:							
Return on plan assets, excluding amounts included in interest income	947	6	387	1 340	(3)	5	2
Gain/(loss) from change in demographic assumptions	79	15	(13)	81	1	(1)	–
(Loss)/gain from change in financial assumptions	(301)	(60)	(593)	(954)	2	112	114
Experience gain/(loss)	227	205	(74)	358	1	(1)	–
Total	952	166	(293)	825	1	115	116
Exchange differences	94	(75)	(41)	(22)	–	(7)	(7)
Employer contributions	32	10	74	116	–	26	26
Benefit payments from plans	–	–	79	79	–	13	13
Acquisitions through business combinations	1 652	(2 644)	(249)	(1 241)	–	–	–
Other(1)	(180)	154	(13)	(39)	–	–	–
Total	1 598	(2 555)	(150)	(1 107)	–	32	32
As of December 31	2 517	(2 482)	(928)	(893)	(1)	(388)	(389)

(1) Includes Section 420 asset transfer between United States pension and United States Opeb.

Notes to consolidated financial statements continued

The movements in the impact of the asset ceiling limitation for the years ended December 31:

EURm	2016				2015		
	United States pension	United States Opeb	Other pension	Total	United States pension	Other pension	Total
As of January 1	–	–	(9)	(9)	–	(3)	(3)
Interest expense	(1)	–	(1)	(2)	–	–	–
Remeasurements:							
Change in asset ceiling, excluding amounts included in interest (expense)/income	(251)	–	(7)	(258)	–	(6)	(6)
Acquisitions through business combinations	–	–	(22)	(22)	–	–	–
Exchange differences	(13)	–	(1)	(14)	–	–	–
As of December 31	(265)	–	(40)	(305)	–	(9)	(9)

Net balances as of December 31:

EURm	2016				2015		
	United States pension	United States Opeb	Other pension	Total	United States pension	Other pension	Total
Total as of December 31	2 252	(2 482)	(968)	(1 198)	(1)	(397)	(398)

Present value of obligations includes EUR 21 271 million (EUR 428 million in 2015) of wholly funded obligations, EUR 6 122 million (EUR 1 337 million in 2015) of partly funded obligations and EUR 1 270 million (EUR 75 million in 2015) of unfunded obligations.

Recognized in the income statement

Recognized in personnel expenses in the consolidated income statement for the years ended December 31:

EURm	2016		2015	2014
Current service cost	155	46	39	
Past service cost and gains and losses on curtailments	2	(5)	–	
Net interest cost	65	9	7	
Settlements	–	–	(1)	
Other	–	1	–	
Total	222	51	45	
Of which relates to:				
United States pensions	32	1	–	
United States Opeb	92	–	–	
Other pensions	98	50	45	

Recognized in comprehensive income

Recognized in other comprehensive income for the years ended December 31:

EURm	2016		2015	2014
Return on plan assets (excluding interest income), gain	1 340	2	44	
Changes in demographic assumptions, gain/(loss)	81	–	(1)	
Changes in financial assumptions, (loss)/gain	(954)	114	(321)	
Experience adjustments, gain/(loss)	358	–	(16)	
Current year change in asset ceiling	(259)	(6)	4	
Total	566	110	290	
Of which relates to:				
United States pensions	701	–	–	
United States Opeb	166	–	–	
Other pensions	(301)	110	290	

Actuarial assumptions and sensitivity analysis
Actuarial assumptions

Assumptions regarding future mortality are set based on actuarial advice in accordance with published statistics and experience in each country. The discount rates and mortality tables used for the significant plans:

	2016	2015	2016
	Discount rate %		Mortality table
United States	3.7	4.5	RP-2014 w/MP-2016
Germany	1.6	2.5	mortality projection scale
United Kingdom(1)	2.7	3.6	Heubeck Richttafeln
Total weighted average for all countries	3.3	3.0	2005G S2PA Light

(1) Tables are adjusted with 1.5% long-term rate of improvement.

The principal actuarial weighted average assumptions used for determining the defined benefit obligation:

%	2016	2015
Discount rate for determining present values	3.3	3.0
Annual rate of increase in future compensation levels	1.9	2.6
Pension growth rate	0.3	1.3
Inflation rate	2.0	1.4
Weighted average duration of defined benefit obligations	11yrs	15yrs

United States defined benefit plans

Actuarial assumptions used for determining the defined benefit obligation:

%	2016	2015
Benefit obligation, discount rate		
Pension	3.7	4.5
Post-retirement healthcare and other	3.4	—
Post-retirement group life	3.8	—
Annual rate of increase in future compensation levels	2.08	—
Assumed healthcare cost trend rates		
Healthcare costs trend rate assumed for next year	7.5	
Healthcare cost trend rate assumed for next year (excluding post-retirement dental benefits)	7.7	
Terminal growth rate	4.9	
Year that the rate reaches the terminal growth value	2028	

Sensitivity analysis

The sensitivity of the defined benefit obligation to changes in the principal assumptions:

	Change in assumption	Increase in assumption(1) EURm	Decrease in assumption(1) EURm
Discount rate for determining present values	1.0%	2 766	(3 361)
Annual rate of increase in future compensation levels	1.0%	(126)	112
Pension growth rate	1.0%	(580)	481
Inflation rate	1.0%	(581)	471
Healthcare cost trend rate	1.0%	(74)	67
Life expectancy	1 year	(826)	773

(1) Positive movement indicates a reduction in the defined benefit obligation; a negative movement indicates an increase in the defined benefit obligation.

The above sensitivity analyses are based on a change in an assumption while holding all other assumptions constant and may not be representative of the actual impact of changes. If more than one assumption is changed simultaneously, the combined impact of changes would not necessarily be the same as the sum of the individual changes. If the assumptions change to a different level compared with that presented above, the effect on the defined benefit obligation may not be linear. The methods and types of assumptions used in preparing the sensitivity analyses are the same as in the previous period.

When calculating the sensitivity of the defined benefit obligation to significant actuarial assumptions, the same method has been applied as when calculating the post-employment benefit obligation recognized in the consolidated statement of financial position; specifically, the present value of the defined benefit obligation is calculated with the projected unit credit method. Increases and decreases in the discount rate, rate of increase in future compensation levels, pension growth rate and inflation, which are used in determining the defined benefit obligation, do not have a symmetrical effect on the defined benefit obligation primarily due to the compound interest effect created when determining the net present value of the future benefit.

Notes to consolidated financial statements continued

Investment strategies

The overall investment objective is to preserve or enhance the plans' funded status through the implementation of an investment strategy that maximizes return within the context of minimizing surplus 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 Plans' demographics, benefit payments, contributions and funded status. The results of the Asset-Liability framework are implemented on a plan level.

The Group's pension governance does not allow the pension funds themselves to make direct investments and requires all investments to be placed either in funds partnerships or separate accounts managed by professional asset managers. The investment advisors 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 constantly monitored on a stand-alone basis as well as in the broader portfolio context. One major 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 Asset-Liability Model study focuses on minimizing such risks.

Disaggregation of plan assets

EURm	2016				2015			
	Quoted	Unquoted	Total	%	Quoted	Unquoted	Total	%
Equity securities	2 777	–	2 777	10	348	–	348	24
Debt securities	18 329	–	18 329	66	627	98	725	51
Insurance contracts	–	833	833	3	–	78	78	5
Real estate	–	1 389	1 389	5	–	77	77	5
Short-term investments	1 110	–	1 110	4	124	9	133	9
Other	–	3 332	3 332	12	–	90	90	6
Total	22 216	5 554	27 770	100	1 099	352	1 451	100

All short-term investments including cash, equities and nearly all 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. Debt securities represent investments in government and corporate bonds, as well as investments in bond funds, which have quoted market prices in an active market. Debt securities may also comprise investments in funds and direct investments. 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. Other includes commodities as well as alternative investments, including derivative financial instruments.

United States plan

United States plan asset target and actual allocation range of the pension and post-retirement trust by asset category as of December 31, 2016:

%	Pension target allocation range	Percentage of plan assets	Post retirement	
			target allocation	Percentage of post employment plan assets
Equity securities	7–13	10	45	45
Fixed income securities	62–83	73	15	15
Real estate	5–9	6	–	–
Private equity and other	8–15	11	–	–
Cash	–	–	40	40
Total		100	100	100

The majority of the Group's United States pension plan assets are held in a master pension trust. The post-retirement plan assets are held in two separate trusts in addition to the amount set aside in the master pension trust for retiree healthcare. The Pension & Benefits Investment Committee formally approves the target allocation ranges every few years on the completion of the Asset-Liability Model study by external advisors and internal investment management. The overall United States pension plan asset portfolio reflects a balance of investments split about 27.0/73.0 between equity, including alternative investments for this purpose, and fixed income securities.

United States pension plan assets included EUR 15 million Nokia bonds as of December 31, 2016 (EUR 8 million in 2015).

Future cash flows

Contributions

Group contributions to the pension and other post-retirement 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 the Group may determine to be appropriate. Contributions are made to benefit plans for the sole benefit of plan participants. Employer contributions expected to be made in 2017 are EUR 123 million.

United States pension plans

Funding methods

Funding requirements for the three major United States qualified 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 market value or an average value over a period of time; and liabilities to be based on average interest rates over a period of time. A preliminary assessment indicates that no funding is required for the active management and occupational pension plans until, at least 2018. For the inactive occupational pension plan, the Group does not foresee any future funding requirement for regulatory funding purposes, given the plan's asset allocation, and the level of assets compared to liabilities.

Section 420 transfer

Section 420 of the of the IRS ("Section 420") allows for the transfer of pension assets in excess of specified thresholds ("excess pension assets") over the plan's funding obligation to be used to fund the healthcare benefits and life insurance coverage of that plan's retired participants. Section 420 regulations require the Group to continue to provide healthcare benefits or life insurance coverage to those retirees for a certain period of time ("cost maintenance period"), at levels prescribed by the regulations. Section 420 is currently set to expire on December 31, 2025. On December 1, 2016, the Group made EUR 180 million Section 420 transfer of excess pension assets from the inactive occupational pension plan to fund healthcare benefits and life insurance coverage for retirees who, when actively employed were represented by CWA and IBEW. The Group expects to make a further Section 420 transfer during 2017 from the inactive occupational pension plan to fund healthcare benefits and group life insurance coverage.

Contributions

The following table summarizes expected contributions to the pension and post-retirement plans until 2026. These figures include the reimbursements the Group will receive from the coverage provided to plan participants eligible for the Medicare Prescription drug benefit. The Group did not make contributions to its qualified pension plans during 2016, nor does it expect to make any contributions until, at least 2018. Actual contributions may differ from expected contributions due to various factors, including performance of plan assets, interest rates and legislative changes.

EURm	Pension	Post-retirement		
	Non-qualified plans	Non-represented	Other benefit plans	Medicare subsidy ⁽¹⁾ for formerly union represented
2017	28	12	4	(21)
2018	28	12	4	(21)
2019	28	12	4	(20)
2020	28	12	4	(19)
2021	27	12	4	(18)
2022-2026	128	60	255	(79)

(1) Medicare Subsidy is recorded within other movements in the reconciliation of the present value of the defined benefit obligation.

Certain actuarial assumptions used to determine whether pension plan funding is required differ from those used for accounting purposes, which may cause significant differences in volatile markets. While the basis for developing discount rates in both cases is by corporate bond yields, for accounting purposes, a yield curve developed by CitiGroup is used as of the close of the last business day of the financial year; whereas the ERISA funding rules allow the use of either a daily average yield curve for the last month of the financial year, or a two-year average yield curve. When measuring assets, fair values of plan assets as of the last business day of the financial year are used for accounting purposes; whereas ERISA funding rules allow for "asset smoothing" that averages fair values over periods as long as two years with limited expected returns included in the averaging. The approach applied by ERISA for the regulatory funding valuation minimizes the impact of sharp changes in asset values and corporate bond yields in volatile markets.

Healthcare benefits for both management and formerly union represented retirees' benefits are capped for those who retired after February 28, 1990. The benefit obligation associated with this group of retirees is approximately 49% of the total United States retiree healthcare obligation as of December 31, 2016. Medicare is the primary payer for those aged 65 and older, comprising almost all of uncapped retirees.

Notes to consolidated financial statements continued

Benefit payments

The following table summarizes expected benefit payments from the pension and post-retirement plans and other post-employment benefit plans until 2026. Actual benefit payments may differ from expected benefit payments. The amounts for the United States plans are net of expected plan participant contributions, as well as the annual Medicare Part D subsidy of approximately EUR 21 million.

EURm	United States direct benefit payments						Other countries	Total
	Pension			Post-retirement				
	Qualified management	Qualified occupational	Non-qualified plans	Formerly union represented	Non-union represented	Other		
2017	1 302	324	29	127	12	85	299	2 178
2018	1 232	311	28	114	12	86	256	2 039
2019	1 196	299	28	109	12	88	259	1 991
2020	1 160	286	27	139	12	89	262	1 975
2021	1 124	274	27	131	12	90	285	1 943
2022-2026	5 069	1 182	128	514	59	462	1 450	8 864

Benefit payments are paid from plan assets where plans are fully funded. Funding mechanisms, such as the Section 420 transfer, are further utilized to minimize direct benefit payments for underfunded United States Opeb liabilities. Direct benefit payments expected to be paid in 2017 total EUR 119 million.

28. Accrued expenses, deferred revenue and other liabilities

Non-current liabilities

EURm	2016	2015
Advance payments and deferred revenue(1)	1 171	1 235
Salaries, wages and social charges	138	—
Other	144	19
Total	1 453	1 254

(1) Includes a prepayment of EUR 1 080 million (EUR 1 235 million in 2015) relating to a ten-year mutual patent license agreement with Microsoft. Refer to Note 6, Disposals treated as Discontinued operations.

Current liabilities

EURm	2016	2015
Advance payments and deferred revenue	3 178	1 857
Salaries, wages and social charges	1 576	891
VAT and other indirect taxes	362	164
Other	1 296	483
Total	6 412	3 395

Other accruals include accrued royalties, research and development expenses, marketing expenses and interest expenses, as well as various amounts which are individually insignificant.

29. Provisions

EURm	Restructuring	Warranty	Litigation	Environmental	Project losses	Divestment-related	Material liability	Other	Total
As of January 1, 2015	247	117	68	16	107	137	24	157	873
Disposal of businesses	–	–	(3)	–	–	–	–	(2)	(5)
Translation differences	(4)	2	(11)	–	–	(12)	–	7	(18)
Reclassification	(15)	–	15	–	–	(6)	–	–	(6)
Charged to income statement:									
Additional provisions	105	31	24	–	5	49	46	42	302
Changes in estimates	(14)	(21)	(11)	–	(25)	(22)	(20)	(18)	(131)
Total charged to income statement	91	10	13	–	(20)	27	26	24	171
Utilized during year(1)	(125)	(35)	(13)	–	(25)	(17)	(21)	(54)	(290)
As of December 31, 2015	194	94	69	16	62	129	29	132	725
Acquisitions through business combinations	291	135	100	114	180	26	31	366	1 243
Translation differences	2	1	22	4	–	9	2	1	41
Reclassification	–	–	8	–	–	(2)	1	(7)	–
Charged to income statement:									
Additional provisions	874	121	75	28	44	16	57	325	1 540
Changes in estimates	(123)	(38)	(31)	(2)	(31)	(24)	(21)	(104)	(374)
Total charged to income statement	751	83	44	26	13	(8)	36	221	1 166
Utilized during year(2)	(525)	(106)	(60)	(26)	(124)	(44)	(22)	(288)	(1 195)
As of December 31, 2016	713	207	183	134	131	110	77	425	1 980

(1) The utilization of restructuring provision includes items transferred to accrued expenses, of which EUR 7 million remained in accrued expenses as of December 31, 2015.

(2) The utilization of restructuring provision includes items transferred to accrued expenses, of which EUR 62 million remained in accrued expenses as of December 31, 2016. The utilization of project losses includes EUR 7 million transferred to inventory write-downs. The utilization of other provisions includes items transferred to accrued expenses, of which EUR 7 million remained in accrued expenses as of December 31, 2016.

The restructuring provision includes personnel and other restructuring-related costs, such as real estate exit costs. On April 6, 2016, the Group expanded its restructuring activities and launched a new cost savings program, recognizing a EUR 677 million restructuring provision. The utilization during the year was EUR 210 million, of which EUR 58 million remained in accrued expenses as of December 31, 2016. In addition, the restructuring provision includes EUR 257 million relating to previously announced restructuring programs. The majority of the restructuring related cash outflows are expected to occur over the next two years.

The warranty provision relates to sold products. Cash outflows related to the warranty provision are generally expected to occur within the next 18 months.

The litigation provision includes estimated potential future settlements for litigation. Cash outflows related to the litigation provision are inherently uncertain and generally occur over several periods.

The environmental provision includes estimated costs to sufficiently clean and refurbish contaminated sites, to the extent necessary, and where necessary, continuing surveillance at sites where the environmental remediation exposure is less significant. Cash outflows related to the environmental liability are inherently uncertain and generally occur over several periods.

The project loss provision is based on IAS 11, Construction Contracts, and relates to onerous customer contracts. Cash outflows related to the project loss provision are generally expected to occur over the next 12 months.

The divestment-related provision relates to the sale of businesses, and includes certain liabilities where the Group is required to indemnify the buyer. Cash outflows related to the divestment-related provision are inherently uncertain.

The material liability provision relates to non-cancellable purchase commitments with suppliers. Cash outflows related to the material liability provision are expected to occur over the next 12 months.

Other provisions include provisions for various contractual obligations and other obligations. Cash outflows related to other provisions are generally expected to occur over the next two years.

Notes to consolidated financial statements continued

Legal matters

A number of Group companies are and will likely continue to be subject to various legal proceedings and investigations that arise from time to time, including proceedings regarding intellectual property, product liability, sales and marketing practices, commercial disputes, employment, and wrongful discharge, antitrust, securities, health and safety, environmental, tax, international trade, and privacy matters. As a result, the Group may incur substantial costs that may not be covered by insurance and could affect business and reputation. While management does not expect any of these legal proceedings to have a material adverse effect on the Group's financial position, litigation is inherently unpredictable and the Group may in the future incur judgments or enter into settlements that could have a material adverse effect on the results of operations and cash flows.

Litigation and proceedings

Irish Broadband

In 2010, the Imagine group (IBB Internet Services & Irish Broadband Internet Services trading as Imagine Networks) ("IBB") served a claim in the commercial court of Ireland for breach of contract and tort against Motorola Limited. The claim was later amended to add Imagine Communications Group as an additional plaintiff. In 2011, Nokia Siemens Networks acquired certain assets and liabilities including this matter from Motorola Solutions Inc. ("Motorola"). Among other things, IBB claims that WiMax network equipment purchased from Motorola failed to perform as promised. The Group disputes these allegations. In 2015, the same claim was made against the Group directly for any amount of the claim that is deemed irrecoverable against Motorola by virtue of the assignment. The case was settled in 2016.

Vertu

The Group divested the United Kingdom-based luxury handset business, Vertu, to Crown Bidco Ltd in 2013. In 2014, Crown Bidco Ltd served a claim in the Commercial Court in London alleging breach of contract in relation to the transfer of IT assets and breach of warranties under the sale agreement. The Group disputes these allegations. In January 2016, the Group discovered material which allowed it to serve a counterclaim naming Crown Bidco and other third parties from EQT (the financier behind Crown Bidco) as defendants. The trial is expected in 2017.

Mass labor litigation Brazil

The Group is defending against a substantial number of labor claims in various Brazilian labor courts. Plaintiffs are former employees whose contracts were terminated after the Group exited from certain managed services contracts. The claims mainly relate to payments made under, or in connection with, the terminated labor contracts. The Group has closed the majority of the court cases through settlement or judgement. Closure of the remaining open cases is expected to occur within the next several years.

Asbestos litigation in the United States

The Group is defending approximately 400 asbestos-related matters, at various stages of litigation, originating from Alcatel Lucent entities. 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

Apple

On December 21, 2016, the Group commenced patent infringement proceedings against Apple in Asia, Europe and the United States. Across actions in 11 countries, more than 50 Nokia patents are now in suit, covering a range of technologies, such as display, user interface, software, antenna, chipsets and video coding as well as 3G and 4G cellular standards. Schedules for the various actions are yet to be set.

LG Electronics

In 2015, LG Electronics agreed to take a royalty-bearing smartphone patent license from Nokia Technologies. The detailed royalty payment obligations are subject to arbitration, which is expected to conclude by the end of 2018. Terms of the agreement are confidential.

30. Commitments and contingencies

Contractual obligations

Payments due for contractual obligations as of December 31, 2016 by due date:

EURm	Within 1 year	1 to 3 years	4 to 5 years	More than 5 years	Total
Purchase obligations(1)	2 075	616	122	3	2 816
Operating leases(2)	259	386	236	260	1 141
Total	2 334	1 002	358	263	3 957

(1) Includes inventory purchase obligations, service agreements and outsourcing arrangements.

(2) Includes leasing costs for office, manufacturing and warehouse space under various non-cancellable operating leases. Certain contracts contain renewal options for various periods of time.

Guarantees and other contingent commitments

EURm	2016	2015
Collateral for own commitments		
Assets pledged	5	7
Contingent liabilities on behalf of Group companies(1)		
Guarantees issued by financial institutions	1 805	398
Other guarantees	794	129
Contingent liabilities on behalf of associated companies and joint ventures		
Financial guarantees	11	15
Contingent liabilities on behalf of other companies		
Financial guarantees	—	6
Other guarantees	135	137
Financing commitments		
Customer finance commitments(2)	223	180
Venture fund commitments(3)	525	230

(1) Includes guarantees to third parties in the normal course of business. These are mainly guarantees given by financial institutions to the Group's customers for the performance of the Group's obligations under supply agreements, including tender bonds, performance bonds, and warranty bonds issued by financial institutions on behalf of the Group. Depending on the nature of the guarantee, compensation is either payable on demand, or subject to verification of non-performance. Additionally, the Group has issued corporate guarantees with primary obligation given directly to customers. These guarantees have been issued by Nokia Corporation for EUR 88 million (EUR 74 million at December 31, 2015), as well as by certain Alcatel Lucent entities for EUR 1 520 million. In Other guarantees, the Group reports guarantees related to non-commercial contracts that support business activities. As a result of internal policies and active management of outstanding guarantee exposure, the Group has not been subject to any material guarantee claims during recent years.

(2) Customer finance commitments are available under loan facilities negotiated with customers. Availability of the facility is dependent upon the borrower's continuing compliance with the agreed financial and operational covenants, and compliance with other administrative terms of the facility. The loan facilities are primarily available to fund capital expenditure relating to purchases of network infrastructure equipment and services. Refer to Note 36, Risk management.

(3) On February 21, 2016, Nokia Growth Partners announced the closing of a new USD 350 million fund for investments in Internet of Things companies. The Group sponsors the fund and will serve to identify new opportunities to grow the ecosystem in these solutions. As a limited partner in Nokia Growth Partners and certain other funds making technology-related investments, the Group is committed to capital contributions and entitled to cash distributions according to the respective partnership agreements and underlying fund activities.

The amounts represent the maximum principal amount for commitments and contingencies.

Notes to consolidated financial statements continued

31. Notes to the consolidated statement of cash flows

EURm	2016	2015	2014
Adjustments for(1)			
Depreciation and amortization	1 594	320	297
Share-based payment	113	49	37
Impairment charges	125	11	1 335
Restructuring charges(3)	751	48	115
Profit on sale of property, plant and equipment and available-for-sale investments	(82)	(132)	(56)
Transfer from hedging reserve to sales and cost of sales	27	61	(10)
Share of results of associated companies and joint ventures (Note 34)	(18)	(29)	12
Financial income and expenses	308	211	600
Income tax (benefit)/expense	(429)	338	(1 281)
Gain on the sale of businesses(2)	(14)	(1 178)	(3 386)
Other income and expenses	32	40	75
Total	2 407	(261)	(2 262)
Change in net working capital			
Decrease/(increase) in short-term receivables	18	(728)	52
Decrease/(increase) in inventories	533	341	(462)
(Decrease)/increase in interest-free short-term liabilities	(2 758)	(990)	1 398
Total	(2 207)	(1 377)	988

(1) Includes Continuing and Discontinued operations. Refer to Note 6, Disposals treated as Discontinued operations.

(2) In 2014, impairment charges, foreign exchange differences, taxes and other adjustments relating to the Sale of the D&S Business were presented separately from the gain.

(3) Adjustments represent the non-cash portion of the restructuring charges recognized in the consolidated income statement.

In 2016, the purchase consideration in relation to the Acquisition of Alcatel Lucent comprises the issuance of new Nokia shares in addition to cash payments. Refer to Note 5, Acquisitions. In 2015, the Group exercised its option to redeem EUR 750 million convertible bonds at their principal amount outstanding plus accrued interest. Virtually all bondholders elected to convert their convertible bonds into Nokia shares before redemption. The conversion did not have a cash impact. In 2014, the convertible bonds issued to Microsoft in 2013 have been netted against the proceeds from the Sale of the D&S Business.

32. Principal Group companies

The Group's significant subsidiaries as of December 31, 2016:

Company name	Country of incorporation and place of business	Primary nature of business	Parent holding %	Group ownership interest %
Nokia Solutions and Networks B.V.	The Hague, Netherlands	Holding company	–	100.0
Nokia Solutions and Networks Oy	Helsinki, Finland	Sales and manufacturing company	–	100.0
Nokia Solutions and Networks US LLC	Delaware, USA	Sales company	–	100.0
Nokia Solutions and Networks Japan Corp.	Tokyo, Japan	Sales company	–	100.0
Nokia Solutions and Networks India Private Limited	New Delhi, India	Sales and manufacturing company	–	100.0
Nokia Solutions and Networks System Technology (Beijing) Co., Ltd.	Beijing, China	Sales company	–	100.0
Nokia Solutions and Networks Branch Operations Oy	Helsinki, Finland	Sales company	–	100.0
PT Nokia Solutions and Networks Indonesia	Jakarta, Indonesia	Sales company	–	100.0
Nokia Solutions and Networks Taiwan Co., Ltd.	Taipei, Taiwan	Sales company	–	100.0
Nokia Solutions and Networks Spain S.L.	Madrid, Spain	Sales company	–	99.9
Alcatel Lucent SA	Boulogne-Billancourt, France	Holding company	100.0	100.0
Alcatel-Lucent Participations SA	Boulogne-Billancourt, France	Holding company	–	100.0
Alcatel-Lucent USA Inc.	Delaware, USA	Sales company	–	100.0
Alcatel-Lucent Shanghai Bell Co., Ltd(1)	Shanghai, China	Sales and manufacturing company	–	50.0
Alcatel-Lucent International SAS	Boulogne-Billancourt, France	Sales company	–	100.0
Alcatel-Lucent Submarine Networks SAS	Boulogne-Billancourt, France	Sales and manufacturing company	–	100.0
Alcatel-Lucent Bell NV	Antwerp, Belgium	Sales company	–	100.0
Alcatel-Lucent Telecom Limited	Bristol, UK	Sales company	–	100.0
Alcatel-Lucent Canada Inc.	Ottawa, Canada	Sales company	–	100.0
Alcatel-Lucent España S.A.	Madrid, Spain	Sales company	–	100.0
Alcatel-Lucent Italia SPA	Milan, Italy	Sales company	–	100.0
Nokia Finance International B.V.	Haarlem, Netherlands	Holding company	100.0	100.0
Nokia Technologies Oy	Helsinki, Finland	Sales and development company	100.0	100.0

(1) The Group owns 50% plus one share in Alcatel-Lucent Shanghai Bell Co., Ltd, the other shareholder being China Huaxin, an entity controlled by the Chinese government. Refer to Note 33, Significant partly-owned subsidiaries.

33. Significant partly-owned subsidiaries

In 2016, the Group acquired a partly owned consolidated subsidiary, Alcatel-Lucent Shanghai Bell Co., Ltd, which has a non-controlling interest (50% less one share) that is material to the Group. Alcatel-Lucent Shanghai Bell Co., Ltd, a company incorporated in China, which, with its subsidiaries in China and in the rest of the world, including the RFS Group, make up the Alcatel-Lucent Shanghai Bell Group.

Financial information for the Alcatel-Lucent Shanghai Bell Group⁽¹⁾:

EURm	2016
Summarized income statement	
Net sales ⁽²⁾	1 806
Operating loss	(136)
Loss for the year	(89)
Loss for the year attributable to:	
Equity holders of the parent	(45)
Non-controlling interests	(45)
Summarized statement of financial position	
Non-current assets	424
Non-current liabilities	(128)
Non-current net assets	296
Current assets ⁽³⁾	2 841
Current liabilities	(1 657)
Current net assets	1 184
Net assets⁽⁴⁾	1 480
Non-controlling interests	775
Summarized statement of cash flows	
Net cash used in operating activities	(182)
Net cash from investing activities	89
Net cash used in financing activities	(24)
Net decrease in cash and cash equivalents	(117)

- (1) Financial information for the Alcatel-Lucent Shanghai Bell Group is presented before eliminations of intercompany transactions with the rest of the Group but after eliminations of intercompany transactions between entities within the Alcatel-Lucent Shanghai Bell Group.
(2) Includes EUR 483 million net sales to other Group entities.
(3) Includes a total of EUR 1 284 million of cash and cash equivalents and available-for-sale investments, liquid assets.
(4) The distribution of the profits of Alcatel-Lucent Shanghai Bell Co., Ltd requires the passing of a special resolution by more than two-thirds of its shareholders, subject to a requirement that at least 50% of the after-tax distributable profits are distributed as dividends each year.

34. Investments in associated companies and joint ventures

EURm	2016	2015
Net carrying amount as of January 1	84	51
Translation differences	(1)	6
Acquisitions through business combinations	20	–
Disposals	(4)	–
Share of results	18	29
Dividends	(1)	(2)
Net carrying amount as of December 31	116	84

Shareholdings in associated companies and joint ventures comprise investments in unlisted companies.

Notes to consolidated financial statements continued

35. Related party transactions

The Group has related party transactions with a pension fund, associated companies, joint ventures and other entities where the Group has significant influence, as well as the management and the Board of Directors. Transactions and balances with companies over which the Group exercises control are eliminated on consolidation. Refer to Note 2, Significant accounting policies, and Note 32, Principal Group companies.

Transactions with pension fund

The Group has borrowings of EUR 69 million (EUR 69 million in 2015) from Nokia Unterstützungsgesellschaft GmbH, the Group'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 even though they have the right to terminate the loan with a 90-day notice. The loan is included in short-term interest-bearing liabilities in the consolidated statement of financial position.

Transactions with associated companies, joint ventures and other entities where the Group has significant influence

EURm	2016	2015	2014
Share of results	18	29	(12)
Dividend income	1	2	–
Share of shareholders' equity	116	84	51
Sales	62	(1)	1
Purchases	(322)	(233)	(305)
Receivables	13	–	–
Payables	(38)	(37)	(35)

The Group has guaranteed a loan of EUR 11 million (EUR 15 million in 2015) for an associated company.

Management compensation

Compensation information for the President and CEO:

EUR	Base salary/ fee(1)	Cash incentive payments	Share-based payment expenses(2)	Pension expenses
2016				
Rajeev Suri, President and CEO	1 049 044	780 357	5 296 960	469 737
2015				
Rajeev Suri, President and CEO	1 000 000	1 922 195	4 604 622	491 641
2014				
Rajeev Suri, President and CEO from May 1, 2014	666 667	1 778 105	3 896 308	366 989
Risto Siilasmaa, Interim CEO from September 3, 2013 to May 1, 2014(3)	1 126 323	–	–	191 475
Timo Ihamuotila, Interim President from September 3, 2013 to May 1, 2014(4)	100 000	–	72 643	17 000

(1) Base salaries are pro-rated for the time in role. Incentive payments represent full-year incentive payment earned under the Group's short-term incentive programs. For interim roles, the base salary/fee is for role-related responsibilities only.

(2) Represents the expense for all outstanding equity grants recorded during 2016.

(3) Represents the value of 200 000 shares awarded as compensation for additional responsibilities, the balance of which was given in shares after deducting associated taxes and social security contributions.

(4) Includes EUR 100 000 as compensation for additional responsibilities. Also includes an equity grant with an approximate aggregate grant date value of EUR 250 000 in the form of Nokia stock options and Nokia restricted shares. These grants are subject to the standard terms and conditions and vesting schedules of the Group's equity plans. Refer to Note 26, Share-based payment.

Total remuneration awarded to the Group Leadership Team for their time as members of the Group Leadership Team:

EURm	2016	2015	2014
Short-term benefits	26	9	8
Post-employment benefits(1)	1	1	1
Share-based payment(2)	15	9	(3)
Termination benefits(3)	1	3	36
Total	43	22	42

(1) The members of the Group Leadership Team participate in the local retirement programs applicable to employees in the country where they reside.

(2) Due to the significant changes in the Group Leadership Team during 2014, following the Sale of the D&S Business, share-based payment for 2014 reflects cumulative expense reversal for lapsed equity awards.

(3) Includes both termination payments and payments made under exceptional contractual arrangements for lapsed equity awards. Includes payments to former leadership members that left the Group in 2015.

Board of Directors' compensation

The annual remuneration paid to the members of the Board of Directors, as decided by the Annual General Meetings in the respective years:

	2016		2015		2014	
	Gross annual fee(1) EUR	Shares received number	Gross annual fee(1) EUR	Shares received number	Gross annual fee(1) EUR	Shares received number
Risto Siilasmaa, Chair(2)	440 000	35 001	440 000	29 339	440 000	31 186
Olivier Piou, Vice Chair(3)	255 082	19 892	—	—	—	—
Vivek Badrinath(4)	175 000	13 921	140 000	9 333	140 000	9 922
Bruce Brown(5)	190 000	15 114	155 000	10 333	155 000	10 986
Elisabeth Doherty(6)	—	—	140 000	9 333	140 000	9 922
Louis R. Hughes(7)	240 410	18 752	—	—	—	—
Simon Jiang(8)	—	—	130 000	8 666	—	—
Jouko Karvinen(9)	—	—	175 000	11 667	175 000	12 403
Mårten Mickos(10)	—	—	—	—	130 000	9 214
Jean C. Monty(11)	225 410	17 558	—	—	—	—
Elizabeth Nelson(12)	190 000	15 114	140 000	9 333	140 000	9 922
Carla Smits-Nusteling(13)	175 000	13 921	—	—	—	—
Kari Stadigh(14)	160 000	12 727	130 000	8 666	130 000	9 214
Dennis Strigl(10)	—	—	—	—	130 000	9 214
Total	2 050 902		1 450 000		1 580 000	

- (1) 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. The meeting fees, as resolved by the Annual General Meeting in 2016, will be paid in cash in 2017 and are not included in the table above.
- (2) Represents compensation paid for services as the Chair of the Board. Excludes compensation paid for services as the Interim CEO in 2014. Refer to the management compensation section above.
- (3) Consists of EUR 70 082 for services as the Vice Chair of the Board from January 8, 2016 until the Annual General Meeting in 2016 and EUR 185 000 for services as the Vice Chair of the Board from the Annual General Meeting in 2016.
- (4) Consists of EUR 160 000 for services as a member of the Board and EUR 15 000 for services as a member of the Audit Committee. Mr. Badrinath resigned on July 29, 2016 and has returned the compensation paid to him.
- (5) Consists of EUR 160 000 for services as a member of the Board and EUR 30 000 for services as the Chair of the Personnel Committee.
- (6) Served as a member of the Audit Committee and a member of the Board until January 8, 2016.
- (7) Consists of EUR 60 738 for services as a member of the Board and EUR 4 672 for services as a member of the Audit Committee from January 8, 2016 until the Annual General Meeting in 2016; and EUR 160 000 for services as a member of the Board and EUR 15 000 for services as a member of the Audit Committee from the Annual General Meeting in 2016.
- (8) Served as a member of the Board until the Annual General Meeting in 2016.
- (9) Served as the Vice Chair of the Board until January 8, 2016, the Chair of the Audit Committee until April 1, 2016, and as a member of the Board until the Annual General Meeting in 2016.
- (10) Served as a member of the Board until the Annual General Meeting in 2015.
- (11) Consists of EUR 60 738 for services as a member of the Board and EUR 4 672 for services as a member of the Audit Committee from January 8, 2016 until the Annual General Meeting in 2016; and EUR 160 000 for services as a member of the Board from the Annual General Meeting in 2016.
- (12) Consists of EUR 160 000 for services as a member of the Board and EUR 30 000 for services as the Chair of the Audit Committee.
- (13) Consists of EUR 160 000 for services as a member of the Board and EUR 15 000 for services as a member of the Audit Committee from the Annual General Meeting in 2016.
- (14) Consists of EUR 160 000 for services as a member of the Board.

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 2016, 2015 or 2014.

Terms of termination of employment of the President and CEO

The President and CEO, Rajeev Suri, may terminate his service contract at any time with six months' prior notice. The Group may terminate his service contract for reasons other than cause at any time with an 18 months' notice period. If there is a change of control event as defined in Mr. Suri's service contract and the service contract is terminated either by the Group or its successor without cause, or by him for "good reason", he would be entitled to a severance payment equaling up to 18 months of compensation and cash payment of the pro-rated value of his outstanding unvested equity awards, if he is dismissed within 18 months of the change in control event.

Notes to consolidated financial statements continued

36. Risk management

General risk management principles

The Group has a systematic and structured approach to risk management across business operations and processes. Key risks and opportunities are identified primarily against business targets either in business operations or as an integral part of financial planning. Key risks and opportunities are analyzed, managed, monitored and identified as part of business performance management with the support of risk management personnel. The Group's overall risk management concept is based on managing the key risks that would prevent the Group from meeting its objectives, rather than solely focusing on eliminating risks. The principles documented in the Nokia Enterprise Risk Management Policy, approved by the Audit Committee of the Board of Directors, require risk management and its elements to be integrated into key processes. One of the main 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 to their roles and duties. Risk management covers strategic, operational, financial and hazard risks. Key risks and opportunities are reviewed by the Group Leadership Team and the Board of Directors in order to create visibility on business risks as well as to enable prioritization of risk management activities. In addition to the principles defined in the Nokia Enterprise Risk Management Policy, specific risk management implementation is reflected in other key policies.

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 Group 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 Group CFO cover specific areas such as foreign exchange risk, interest rate risk, credit and liquidity risk as well as the use of derivative financial instruments in managing these risks. The Group is risk averse in its treasury activities.

Financial risks are divided into market risk covering foreign exchange risk, interest rate risk and equity price risk; credit risk covering business-related credit risk and financial credit risk; and liquidity risk.

Market risk

Foreign exchange risk

The Group operates globally and is exposed to transaction and translation foreign exchange risks. 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 forward foreign exchange contracts and foreign exchange options. The majority of financial instruments hedging foreign exchange risk have a duration of less than a year. The Group does not hedge forecast foreign currency cash flows beyond two years.

As the Group has entities where the functional currency is other than the euro, the shareholders' equity is exposed to fluctuations in foreign exchange rates. Equity changes caused by movements in foreign exchange rates are shown as currency translation differences in the consolidated financial statements. The Group may use forward foreign exchange contracts, foreign exchange options and foreign currency denominated loans to hedge its foreign exchange exposure arising from foreign net investments.

Currencies that represent a significant portion of the currency mix in outstanding financial instruments as of December 31 are as follows:

EURm	USD	JPY	CNY	GBP
2016				
Foreign exchange derivatives used as cash flow hedges, net(1)	–	(158)	–	–
Foreign exchange derivatives used as fair value hedges, net(2)	(397)	–	–	103
Foreign exchange derivatives used as net investment hedges, net(3)	(1 418)	–	–	(249)
Foreign exchange exposure from statement of financial position items, net	(2 172)	434	(227)	(322)
Foreign exchange derivatives not designated in a hedge relationship, carried at fair value through profit and loss, net(4)	1 747	(174)	(587)	259
Cross-currency/interest rate hedges	1 051	(328)	–	–
2015				
Foreign exchange derivatives used as cash flow hedges, net(1)	(465)	(262)	–	–
Foreign exchange derivatives used as net investment hedges, net(3)	(296)	–	–	–
Foreign exchange exposure from statement of financial position items, net	(1 004)	910	32	(97)
Foreign exchange derivatives not designated in a hedge relationship, carried at fair value through profit and loss, net(4)	(226)	(559)	18	90
Cross-currency/interest rate hedges	1 001	(311)	–	–

(1) Used to hedge the foreign exchange risk from forecasted highly probable cash flows related to sales, purchases and business acquisition activities. In some currencies, especially the U.S. dollar, the Group has substantial foreign exchange risks in both estimated cash inflows and outflows. The underlying exposures for which these hedges are entered into are not presented in the table as they are not financial instruments.

(2) Used to hedge foreign exchange risk from contractual firm commitments. The underlying exposures for which these hedges are entered into are not presented in the table as they are not financial instruments.

(3) Used to hedge net investment exposure. The underlying exposures for which these hedges are entered into are not presented in the table as they are not financial instruments.

(4) Items on the statement of financial position and some probable forecasted cash flows denominated in foreign currencies are hedged by a portion of foreign exchange derivatives not designated in a hedge relationship and carried at fair value through profit and loss.

The methodology for assessing market risk exposures: Value-at-risk

The Group 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. The Group calculates the foreign exchange VaR using the Monte Carlo method which simulates random values for exchange rates in which the Group 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 figures for the Group's financial instruments which are sensitive to foreign exchange risks are presented in the table below. The VaR calculation includes foreign currency denominated monetary financial instruments, such as available-for-sale investments, loans and accounts receivable, investments at fair value through profit and loss, cash, loans and accounts payable; foreign exchange derivatives carried at fair value through profit and loss which are not in a hedge relationship and are mostly used to hedge the statement of financial position foreign exchange exposure; and foreign exchange derivatives designated as forecasted cash flow hedges and net investment hedges. Most of the VaR is caused by these derivatives as forecasted cash flow and net investment exposures are not financial instruments as defined in IFRS 7, Financial Instruments: Disclosures, and thus not included in the VaR calculation.

	2016	2015
EURm	VaR from financial instruments	
As of December 31	83	54
Average for the year	111	145
Range for the year	73–149	54–217

Interest rate risk

The Group is exposed to interest rate risk either through market value fluctuations of items on the consolidated 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 consolidated statement of financial position also expose the Group to interest rate risk. The objective of interest rate risk management is to mitigate adverse impacts arising from interest rate fluctuations on the consolidated income statement, cash flow, and financial assets and liabilities while taking into consideration the Group's target capital structure and the resulting net interest rate exposure.

Interest rate profile of interest-bearing assets and liabilities as of December 31:

	2016		2015	
EURm	Fixed rate	Floating rate ⁽¹⁾	Fixed rate	Floating rate ⁽¹⁾
Assets	2 107	7 410	3 453	6 428
Liabilities	(3 845)	(113)	(2 038)	(31)
Assets and liabilities before derivatives	(1 738)	7 297	1 415	6 397
Interest rate derivatives	1 358	(1 328)	981	(986)
Assets and liabilities after derivatives	(380)	5 969	2 396	5 411

(1) All investments and credit support-related liabilities with initial maturity of three months or less are considered floating rate for the purposes of interest rate risk management. Comparatives have been adjusted to conform to current year presentation.

Notes to consolidated financial statements continued

Interest rate exposure is monitored and managed centrally. The Group 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 the Group has material amounts of financial assets and liabilities while keeping all other variables constant. The Group's sensitivity to interest rate exposure in the investment and debt portfolios is presented in the table below. Sensitivities to credit spreads are not reflected in the numbers.

EURm	2016			2015		
	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	181	(3)	(2)	6	(8)	(32)
Interest rates – decrease by 50 basis points	(99)	2	1	(5)	4	17

Equity price risk

In 2016, the Group does not have exposure to equity price risk as it does not have significant investments in publicly listed equity shares (EUR 16 million in 2015). The private funds where the Group has investments may, from time to time, have investments in public equity. Such investments have not been included in the above number.

Other market risk

In certain emerging market countries there are local exchange control regulations that provide for restrictions on making cross-border transfers of funds as well as other regulations that impact the Group's ability to control its net assets in those countries.

Credit risk

Credit risk refers to the risk that a counterparty will default on its contractual obligations resulting in financial loss to the Group. 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.

The maximum exposure to credit risk for outstanding customer finance loans is limited to the book value of financial assets as included in the consolidated statement of financial position:

EURm	2016	2015
Financial guarantees given on behalf of customers and other third parties	–	6
Loan commitments given but not used	223	180
Outstanding customer finance loans ⁽¹⁾	129	33
Total	352	219

(1) Includes acquired customer loans on a fair value basis which excludes EUR 33 million considered to be uncollectible.

Business-related credit risk

The Group aims to ensure the highest possible quality in accounts receivable and loans due from customers and other third parties. The Credit Policy, approved by the Group President and CEO, and the related procedures approved by the Group CFO, lay out the framework for the management of the business-related credit risks. The Credit Policy and related procedures set out that credit decisions are based on credit evaluation in each business, including credit rating for larger exposures, according to defined rating principles. Material credit exposures require Group-level approval. Credit risks are monitored in each business and, where appropriate, mitigated with the use of letters of credit, collateral, insurance, and the sale of selected receivables.

Credit exposure is measured as the total of accounts receivable and loans outstanding due from customers and committed credits. Accounts receivable do not include any major concentrations of credit risk by customer. The top three customers account for approximately 3.5%, 3.0% and 2.4% (9.6%, 5.9% and 3.5% in 2015) of accounts receivable and loans due from customers and other third parties as of December 31, 2016. The top three credit exposures by country account for approximately 19.1%, 8.6% and 7.4% (19.6%, 12.1% and 10.8% in 2015) of the Group's accounts receivable and loans due from customers and other third parties as of December 31, 2016. The 19.1% credit exposure relates to accounts receivable in China (19.6% in 2015).

The Group has provided allowances for doubtful accounts on accounts receivable and loans due from customers and other third parties not past due based on an analysis of debtors' credit ratings and credit histories. The Group establishes allowances for doubtful accounts that represent an estimate of expected losses at the end of the reporting period. All receivables and loans due from customers are considered on an individual basis to determine the allowances for doubtful accounts. The total of accounts receivable and loans due from customers is EUR 7 101 million (EUR 3 946 million in 2015). The gross carrying amount of accounts receivable, related to customer balances for which valuation allowances have been recognized, is EUR 2 439 million (EUR 1 150 million in 2015). The allowances for doubtful accounts for these accounts receivable as well as amounts expected to be uncollectible for acquired receivables are EUR 301 million (EUR 62 million in 2015).

Aging of past due receivables not considered to be impaired as of December 31:

EURm	2016	2015
Past due 1-30 days	102	25
Past due 31-180 days	141	53
More than 180 days	223	124
Total	466	202

Financial credit risk

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, the Group 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. The Group enters into collateral agreements with certain 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, the Group has not been subject to any material credit losses in its financial investments in the years presented.

Breakdown of outstanding fixed income and money-market investments by sector and credit rating grades ranked as per Moody's rating categories as of December 31:

EURm	Rating(1)	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)(4)
2016							
Banks	Aaa	1 054	—	—	—	—	1 054
	Aa1-Aa3	410	201	35	—	—	646
	A1-A3	1 405	211	387	116	—	2 119
	Baa1-Baa3	893	728	—	—	—	1 621
	Ba1-Ba3	15	—	—	—	—	15
	Non-rated	42	—	—	—	—	42
Governments	A1-A3	—	—	274	53	—	327
Other	Aa1-Aa3	45	30	1	—	—	76
	A1-A3	52	61	13	—	—	126
	Baa1-Baa3	6	13	5	—	—	24
Total		3 922	1 244	715	169	—	6 050
2015							
Banks	Aaa	3 269	—	—	—	—	3 269
	Aa1-Aa3	93	94	—	—	—	187
	A1-A3	280	320	—	100	—	700
	Baa1-Baa3	738	475	90	—	50	1 353
	Non-rated	12	—	—	—	—	12
Governments	Aaa	—	267	252	444	113	1 076
	Aa1-Aa3	—	—	10	140	—	150
	A1-A3	309	198	257	50	—	814
	Baa1-Baa3	12	—	23	—	—	35
Other	Baa1-Baa3	—	—	—	12	—	12
Total		4 713	1 354	632	746	163	7 608

(1) Bank Parent Company ratings are used here for bank groups. In some emerging markets countries, actual bank subsidiary ratings may differ from the Parent Company rating.

(2) Fixed income and money-market investments include term deposits, structured deposits, investments in liquidity funds and investments in fixed income instruments classified as available-for-sale investments and investments at fair value through profit and loss. Liquidity funds invested solely in government securities are included under Governments. Other liquidity funds are included under Banks.

(3) Instruments that include a call feature have been presented at their final maturities, if any. Instruments that are contractually due beyond 3 months include EUR 566 million (EUR 510 million in 2015) of instruments that have a call period of less than 3 months.

(4) Includes EUR 5 million of restricted investments (EUR 5 million in 2015) within fixed income and money-market investments. These are restricted financial assets under various contractual or legal obligations.

97% (98% in 2015) of the Group's cash at bank of EUR 3 276 million (EUR 2 242 million in 2015) is held with banks of investment grade credit rating.

Notes to consolidated financial statements continued

Financial assets and liabilities subject to offsetting under enforceable master netting agreements and similar arrangements as of December 31:

EURm	Gross amounts of financial assets/ (liabilities)	Gross amounts of financial liabilities/ (assets) set off in the statement of financial position	Net amounts of financial assets/ (liabilities) presented in the statement of financial position	Related amounts not set off in the statement of financial position		Net amount
				Financial instruments assets/(liabilities)	Cash collateral received/(pledged)	
2016						
Derivative assets	235	–	235	153	73	9
Derivative liabilities	(236)	–	(236)	(128)	(96)	(12)
Total	(1)	–	(1)	25	(23)	(3)
2015						
Derivative assets	96	–	96	67	24	5
Derivative liabilities	(114)	–	(114)	(65)	(34)	(15)
Total	(18)	–	(18)	2	(10)	(10)

The financial instruments subject to enforceable master netting agreements and similar arrangements are not offset in the consolidated statement of financial position where there is no intention to settle net or realize the asset and settle the liability simultaneously.

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 available fast enough without endangering its value in order to avoid uncertainty related to financial distress at all times.

The Group aims to secure sufficient liquidity at all times through efficient cash management and by investing in short-term liquid interest-bearing securities and money-market investments. Depending on its overall liquidity position, the Group 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.

Due to the dynamic nature of the underlying business, the Group aims to maintain flexibility in funding by maintaining committed and uncommitted credit lines. As of December 31, 2016 committed revolving credit facilities totaled EUR 1 579 million (EUR 1 500 million in 2015).

Significant current long-term funding programs as of December 31, 2016:

Issuer:	Program:	Issued
Nokia Corporation	Euro Medium-Term Note Program, totaling EUR 5 000 million	–

Significant current short-term funding programs as of December 31, 2016:

Issuer:	Program:	Issued
Nokia Corporation	Local commercial paper program in Finland, totaling EUR 750 million	–

The following table presents an undiscounted cash flow analysis for financial liabilities and financial assets that are presented on the consolidated statement of financial position, and "off-balance sheet" instruments such as loan commitments, according to their remaining contractual maturity. The line-by-line analysis does not directly reconcile with the consolidated statement of financial position.

EURm	Total	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
2016						
Non-current financial assets						
Long-term loans receivable	150	–	2	86	32	30
Current financial assets						
Short-term loans receivable	62	32	28	2	–	–
Investments at fair value through profit and loss	326	–	1	272	53	–
Available-for-sale investments, including cash equivalents(1)	5 753	3 935	1 248	453	117	–
Bank and cash	3 276	3 276	–	–	–	–
Cash flows related to derivative financial assets net settled:						
Derivative contracts—receipts	42	18	(6)	30	–	–
Cash flows related to derivative financial assets gross settled:						
Derivative contracts—receipts	8 221	6 473	492	1 038	13	205
Derivative contracts—payments	(7 942)	(6 404)	(440)	(962)	(5)	(131)
Accounts receivable(2)	5 895	4 430	1 354	106	5	–
Non-current financial liabilities						
Long-term interest-bearing liabilities	(5 807)	(85)	(140)	(1 955)	(269)	(3 358)
Current financial liabilities						
Short-term borrowings	(372)	(255)	(116)	(1)	–	–
Cash flows related to derivative financial liabilities gross settled:						
Derivative contracts—receipts	8 948	7 727	925	248	48	–
Derivative contracts—payments	(9 187)	(7 867)	(995)	(272)	(53)	–
Accounts payable	(3 781)	(3 600)	(152)	(29)	–	–
Contingent financial assets and liabilities						
Loan commitments given undrawn(3)	(223)	(30)	(83)	(110)	–	–
Loan commitments obtained undrawn(4)	1 564	(1)	(3)	1 568	–	–

(1) Instruments that include a call feature have been presented at their final maturities, if any. Instruments that are contractually due beyond 3 months include EUR 566 million of instruments that have a call period of less than 3 months.

(2) Accounts receivable maturity analysis does not include accrued receivables of EUR 1 077 million.

(3) Loan commitments given undrawn have been included in the earliest period in which they could be drawn or called.

(4) Loan commitments obtained undrawn have been included based on the period in which they expire. These amounts include related commitment fees.

Notes to consolidated financial statements continued

EURm	Total	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
2015						
Non-current financial assets						
Long-term loans receivable	58	—	8	28	4	18
Current financial assets						
Short-term loans receivable	22	4	18	—	—	—
Investments at fair value through profit and loss	742	—	256	265	57	164
Available-for-sale investments, including cash equivalents(1)	6 938	4 714	1 105	403	663	53
Bank and cash	2 242	2 242	—	—	—	—
Cash flows related to derivative financial assets net settled:						
Derivative contracts—receipts	51	18	(7)	22	18	—
Cash flows related to derivative financial assets gross settled:						
Derivative contracts—receipts	4 203	3 441	221	42	295	204
Derivative contracts—payments	(4 078)	(3 431)	(209)	(23)	(277)	(138)
Accounts receivable(2)	2 628	2 014	586	25	3	—
Non-current financial liabilities						
Long-term interest-bearing liabilities	(3 070)	(34)	(84)	(244)	(1 549)	(1 159)
Current financial liabilities						
Short-term borrowings	(52)	(50)	(2)	—	—	—
Cash flows related to derivative financial liabilities net settled:						
Derivative contracts—payments	(78)	—	(5)	(8)	(6)	(59)
Cash flows related to derivative financial liabilities gross settled:						
Derivative contracts—receipts	4 901	3 114	760	318	709	—
Derivative contracts—payments	(4 924)	(3 162)	(753)	(302)	(707)	—
Accounts payable	(1 910)	(1 835)	(75)	—	—	—
Contingent financial assets and liabilities						
Loan commitments given undrawn(3)	(180)	(17)	(39)	(124)	—	—
Loan commitments obtained undrawn(4)	1 487	(1)	(4)	1 492	—	—

(1) Instruments that include a call feature have been presented at their final maturities, if any. Instruments that are contractually due beyond 3 months included EUR 510 million of instruments that have a call period of less than 3 months in 2015.

(2) Accounts receivable maturity analysis did not include accrued receivables of EUR 1 285 million in 2015.

(3) Loan commitments given undrawn have been included in the earliest period in which they could be drawn or called.

(4) Loan commitments obtained undrawn have been included based on the period in which they expire. These amounts include related commitment fees.

37. Subsequent events

Non-adjusting events after the reporting period

Acquisition of Deepfield Networks Inc.

On January 31, 2017 the Group acquired 100% ownership interest in Deepfield Networks Inc., a United States-based leader in real-time analytics for IP network performance management and security. The acquisition does not have a material impact to the consolidated statement of financial position, comprehensive income or cash flows.

Offer to acquire Comptel Corporation

On February 8, 2017 the Group and Comptel Corporation entered into a Transaction Agreement whereby the Group undertakes to make a voluntary public cash tender offer to purchase all of the issued and outstanding shares and option rights in Comptel Corporation that are not owned by Comptel Corporation, or any of its subsidiaries. The price offered for each share validly tendered in the Tender Offer will be EUR 3.04 in cash. The Tender Offer values Comptel at approximately EUR 347 million, on a fully diluted basis.

Offer to purchase outstanding notes

On February 22, 2017 the Group announced that it commenced an offer to purchase the outstanding EUR 500 million 6.75% notes due February 4, 2019 (the "2019 Euro Notes") issued by Nokia Corporation; and the outstanding USD 300 million 6.50% notes due January 15, 2028 (the "2028 Dollar Notes") and USD 1 360 million 6.45% notes due March 15, 2029 (the "2029 Dollar Notes"), issued by Lucent Technologies Inc. (the predecessor to Alcatel-Lucent Inc., the Group's wholly-owned subsidiary), up to a maximum cash consideration of USD 1 000 million (the "Tender Offer"). The purpose of the Tender Offer is to manage the overall indebtedness of the Group. Following the settlement of the Tender Offer, the Group expects to cancel any euro-denominated notes purchased pursuant to the Tender Offer and to hold any US dollar-denominated notes purchased pursuant to the Tender Offer.

On March 21, 2017, the Tender Offer expired. The Group received tenders for 53.76% (EUR 268.8 million) of the 2019 Euro Notes, 28.66% (USD 86.0 million) of the 2028 Dollar Notes and 29.48% (USD 400.9 million) of the 2029 Dollar Notes. The Group expects to settle the Tender Offer on March 23, 2017.

New euro-denominated notes

On March 15, 2017, the Group issued EUR 500 million 1.00% Senior Notes due 2021 and EUR 750 million 2.00% Senior Notes due 2024 under our 5 000 000 000 Euro Medium-Term Note Programme. The proceeds of the new notes are intended to fund the Tender Offer and for general corporate purposes.

Income taxes

In January 2017, as part of continuing changes to its operating model, the Group transferred certain intellectual property between its operations in Finland and the United States, which is expected to result in approximately EUR 250 million negative non-recurring impact on tax expenses in the first quarter of 2017 but no material cash tax outflow.

Changes in organizational structure

On March 17, 2017, the Group announced changes in the organizational structure, effective from April 1, 2017. The organizational changes include the separation of the current Mobile Networks business group into two distinct, but closely linked, organizations: (1) Mobile Networks, focused on products and solutions and (2) Global Services, focused on services. The Group will continue to report financial information for Ultra Broadband Networks, IP Networks and Applications and Nokia Technologies. Ultra Broadband Networks will be composed of the Mobile Networks, Global Services and Fixed Networks business groups. IP Networks and Applications is composed of the IP/Optical Networks and Applications & Analytics business groups.

Report of independent registered public accounting firm

To the Board of Directors and shareholders of Nokia Corporation

In our opinion, the accompanying consolidated statement of financial position and the related consolidated income statement, consolidated statement of comprehensive income, consolidated statement of changes in shareholders' equity and consolidated statement of cash flows present fairly, in all material respects, the financial position of Nokia Corporation and its subsidiaries at December 31, 2016 and 2015, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2016 in conformity with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB) and in conformity with IFRS as adopted by the European Union. Also in our opinion, the company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying "Management's annual report on internal control over financial reporting" appearing under Section "Controls and procedures." Our responsibility is to express opinions on these financial statements and on the company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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

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

As described in "Management's Annual Report on Internal Control Over Financial Reporting" appearing under Section "Controls and procedures," management has excluded Alcatel Lucent SA and its subsidiaries from its assessment of internal control over financial reporting as of December 31, 2016 because it was acquired by the company in a purchase business combination during 2016. We have also excluded Alcatel Lucent SA and its subsidiaries from our audit of internal control over financial reporting. Alcatel Lucent SA is a wholly owned subsidiary whose total consolidated assets and net sales represent 42% and 51%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2016.

/s/ PricewaterhouseCoopers Oy
Helsinki, Finland
March 23, 2017

Other information

Contents	
Exhibits	216
Glossary of terms	217
Investor information	220
Contact information	221
Signatures	222

Exhibits

- 1 Articles of Association of Nokia Corporation.
- 4(1) Memorandum of Understanding by and between Nokia Corporation and Alcatel Lucent dated as of April 15, 2015.
- 6 Refer to Note 13, Earnings per share, of our consolidated financial statements included in this annual report on Form 20-F, for information on how earnings per share information was calculated.
- 8 Refer to Note 32, Principal Group companies, of our consolidated financial statements included in this annual report on Form 20-F, for more information on our significant subsidiaries.
- 12.1 Certification of Rajeev Suri, President and Chief Executive Officer of Nokia Corporation, Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- 12.2 Certification of Kristian Pullola, 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(a) Consent of Independent Registered Public Accounting Firm.

(1) Incorporated by reference to Annex A of our registration statement filed on Form F-4 with the Securities and Exchange Commission on August 14, 2015.

Glossary of terms

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.

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. Refer also to LTE.

4.5G Pro: Our next step in a technology path that will optimize the journey to 5G. Powered by the 5G-ready AirScale, 4.5G Pro delivers ten times the speeds of initial 4G networks, enabling operators to offer gigabit peak data rates to meet growing demands from the programmable world. Using extended carrier aggregation techniques across up to five frequency bands, operators will be able to leverage their diverse paired (FDD) and unpaired (TDD) licensed spectrum as well as unlicensed spectrum.

4.9G: Our evolutionary step to enable future service continuity with 5G network fabric. Expected by the end of 2017, 4.9G will provide significant increases in capacity and several gigabits of speed-per-second on the path to 5G. This will include allowing additional numbers of carriers to be aggregated, opening the door to additional licensed and unlicensed spectrum, and advancing the radio systems to allow highly directional antennas to be used and to allow signals sent via multiple transmit/receive paths to be added together.

5G (Fifth Generation Mobile Communications): The next major phase of mobile telecommunications standards. 5G will be the set of technical components and systems needed to handle new requirements and overcome the limits of current systems.

Access network: A telecommunications network between a local exchange and the subscriber station.

ADSL (Asymmetric Digital Subscriber Line): A data communications technology that enables faster data transmission over copper telephone lines than a conventional modem can provide; the technology that introduced broadband to the masses.

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, all the way to massive centralized hyper scale 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 RF elements and system modules; Nokia AirScale Active Antennas; Cloud RAN with Nokia AirScale Cloud Base Station Server and the Cloud-based AirScale RNC 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 SA: Alcatel Lucent, a subsidiary of Nokia Corporation.

API (Application Programming Interface): A set of routines, protocols, and tools for building software applications, specifying how software components should interact.

Applications & Analytics: Our business group offering carrier-grade software applications and platforms to provide operations and business support systems, build, deliver, and optimize services, enable their monetization, and to improve customer 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.

CDMA (Code Division Multiple Access): A technique in which radio transmissions using the same frequency band are coded in a way that a signal from a certain transmitter can be received only by certain receivers.

Churn: Churn rate is 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, storage, applications and services) that can be rapidly provisioned and released with minimal management effort.

CloudBand: Our Cloud management and orchestration solutions enabling a unified Cloud engine and platform for NFV.

Cloud Native Core: Optimizes Cloud core applications and architecture to support massive IoT, mobile broadband and the 5G programmable world.

Continuing operations: Refers to the Continuing operations following the Acquisition of Alcatel Lucent, the Sale of the HERE Business in 2015 and the Sale of the D&S Business in 2014. Our Continuing operations in 2016 included two businesses: our Networks business and Nokia Technologies.

Converged Core: A business unit of our Mobile Networks business group providing solutions for the core network of the future.

Convergence: The coming together of two or more disparate disciplines or technologies. Convergence types are, for example, IP convergence, fixed-mobile convergence and device convergence.

Core network: A combination of exchanges and the basic transmission equipment that together form the basis for network services.

CSPs: Communication service providers.

Customer Experience Management: Software suite used to manage and improve the customer experience, based on customer, device and network insights.

Devices & Services: Our former mobile device business, substantially all of which was sold to Microsoft.

Digital: A signaling technique in which a signal is encoded into digits for transmission.

Discontinued operations: Mainly refers to the divestment of our HERE business to an automotive consortium and the sale of substantially all of our Devices & Services business to Microsoft.

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.

Engine: Hardware and software that perform essential core functions for telecommunication or application tasks.

Glossary of terms continued

ETSI (European Telecommunications Standards Institute):

Standards produced by the ETSI contain technical specifications laying down the characteristics required for a telecommunications product.

FD-LTE (Frequency Division Long-Term Evolution) also known as FDD

(Frequency Division Duplex): A standard for LTE mobile broadband networks. Frequency Division means that separate, parallel connections are used to carry data from the base station to the mobile device ("downlink") and from the mobile device to the base station ("uplink").

Fixed Networks: Our Fixed Networks business group provides copper and fiber access products, solutions, and services.

Future X: A network architecture—a massively distributed, cognitive, continuously adaptive, learning and optimizing network connecting humans, senses, things, systems, infrastructure, 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.

Global Delivery Center: A remote service delivery center with a pool of services experts, automated tools and standardized processes to ensure that services across the entire network life cycle are delivered to operators globally.

Global Services: A business unit within the Networks business, Global Services provides mobile operators with a broad range of services, including professional services, network implementation and customer care services.

GPON (Gigabit Passive Optical Networking): A fiber access technology that delivers 2.5Gbps 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.

HERE: A former Nokia company focused on mapping and location intelligence services, which was divested to an automotive consortium in 2015.

IFRS (International Financial Reporting Standards): International Financial Reporting Standards as issued by the International Accounting Standards Board and in conformity with IFRS as adopted by the European Union.

Implementation patents: Implementation patents include technologies used to implement functionalities in products or services which are not covered by commitments to standards-setting organizations, so they typically offer product differentiation by giving competitive advantage, such as increased performance, smaller size or improved battery life, and the patent owner has no obligation to license them to others.

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.

Industrial design: Design process applied for products that will be manufactured at mass scale.

Internet Protocol: A network layer protocol that offers a connectionless internet work service and forms part of the 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.

IP Multimedia Subsystem (IMS): Architectural framework designed to deliver IP-based multimedia services on telecommunications networks; standardized by 3GPP.

IPR (Intellectual Property Right): Legal right 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.

IPR licensing: Generally refers to an agreement or an arrangement where a company allows another company to use its intellectual property (such as patents, trademarks or copyrights) under certain terms.

IP/Optical Networks: Our IP/Optical Networks business group provides the key IP routing and optical transport systems, software and services to build high capacity network infrastructure for the internet and global connectivity.

LTE (Long-Term Evolution): 3GPP radio technology evolution architecture and a standard for wireless communication of high-speed data. Also referred to as 4G, refer to 4G above.

LTE-M: An IoT radio technology addressing demanding IoT applications needs with low to mid-volume data use of up to about 1Mbps. The technology also simplifies modems by about 80%.

Mobile broadband: Refers to high-speed wireless internet connections and services designed to be used from arbitrary locations.

Mobile Broadband: A segment within Nokia Networks in 2015. Mobile Broadband provided mobile operators with radio and core network software together with the hardware needed to deliver mobile voice and data services.

Mobile Networks: Our Mobile Networks business group offers an industry-leading portfolio of end-to-end mobile networking solutions comprising hardware, software, and services for telecommunications operators, enterprises, and related markets/verticals such as public safety and IoT.

Networks business: Comprised the Mobile Networks, Fixed Networks, Applications & Analytics, and IP/Optical Networks business groups in 2016.

NFC (Near Field Communication): A short-range wireless technology that enables people to connect one NFC-enabled device with another, or to read an NFC tag. By bringing one NFC-enabled mobile device close to another NFC device, or to an NFC tag, people can easily share content, access information and services, or pay for goods.

NFV (Network Functions Virtualization): Principle of separating network functions from the hardware they run on by using virtual hardware abstraction.

Nokia Bell Labs: Our research arm discovering and developing the technological shifts needed for the next phase of human existence as well as exploring and solving complex problems to radically redefine networks.

Nokia Networks: Our former business focused on mobile network infrastructure software, hardware and services.

Nokia Technologies: Our business focused on advanced technology development and licensing.

NSN (Nokia Solutions and Networks): The former name of our Networks business. From 2007, NSN was known as Nokia Siemens Networks until we acquired Siemens' 50% stake in the joint venture in 2013.

Nuage Networks: A wholly owned subsidiary of Alcatel Lucent, delivers a SDN solution to eliminate key data center network constraints that hinder Cloud services adoption.

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, including, for instance, the user interface.

OZO: Our professional Virtual Reality camera, crafted by Nokia Technologies.

OZO Live: Software product, running on reference hardware, that enables real-time 3D 360 stitching for VR broadcasting at scale.

Packet: Part of a message transmitted over a packet switched network.

Picocell: A small cellular base station typically covering a small area typically up to 200 meters wide. Typically used to extend coverage to indoor areas or to add network capacity in areas with very dense phone usage, such as train stations.

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 Networking): A fiber access architecture in which unpowered Fiber Optic Splitters are used to enable a single optical fiber to serve multiple end-points without having to provide individual fibers between the hub and customer.

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 is the intelligence that is added to data to allow people to interpret and use it, rather than just capture it.

RAN (Radio Access Network): A mobile telecommunications system consisting of radio base stations and transmission equipment.

SDN (Software Defined Networking): An approach to computer networking that decouples the network control and forwarding functions enabling the network control to become programmable and the underlying hardware to be abstracted.

SEPs (Standard-Essential Patents): 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.

Service Delivery Hub: Smaller service delivery centers, typically focused on specific technology or language.

Shared Data Layer (SDL): A highly reliable, scalable and readily-available data store in the Cloud. Moving subscribers and session data to SDL and using this shared data in an open ecosystem enable rapid innovations of services and faster revenue growth due to better insight into subscriber behavior.

Single RAN: Single 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; WiFi uses unlicensed spectrum which is therefore not under the operator's exclusive control.

SON (Self-Organizing Network): An automation technology designed to make the planning, configuration, management, optimization and healing of mobile radio access networks simpler and faster.

TD-LTE (Time Division Long-Term Evolution, also known as TDD (Time Division Duplex)): An alternative standard for LTE mobile broadband networks. Time Division means that a single connection

is used alternately to carry data from the base station to the mobile device ("downlink") and then from the mobile device to the base station ("uplink").

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, e.g. 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 to one or more other points.

TWDM-PON (Time Wavelength Division Multiplexing Passive Optical Network): The latest generation fiber access technology, which uses multiple wavelengths to deliver up to 40Gbps total capacity to homes, businesses, and base stations. Also known as NG-PON2.

TXLEs (Technical extra-large enterprises): Technically sophisticated companies, such as banks, that invest heavily in their own network infrastructures to gain a key competitive advantage.

VDSL2 (Very High Bit Rate Digital Subscriber Line 2): A fixed broadband technology, the successor of ADSL. Launched in 2007, it typically delivers a 30Mbps broadband service from a street cabinet (also called a "Fiber-to-the-Node" deployment) over existing telephone lines.

VDSL2 Vectoring: A fixed broadband technology launched in 2011, able to deliver up to 100Mbps over a VDSL2 line by applying noise cancellation techniques to remove cross-talk between neighboring VDSL2 lines.

Virtual Reality (VR): The simulation of a three-dimensional image or environment that can be interacted with in a seemingly real or physical way by a person using special electronic equipment, such as a helmet with a screen inside or gloves fitted with sensors.

VoLTE (Voice over LTE): Required to offer voice services on an all-IP LTE network and generally provided using IP Multimedia Subsystem.

Vplus: A fixed broadband technology, between VDSL2 Vectoring and G.fast in terms of bandwidth and distances, typically used in FTTN (ode) deployments. Launched in 2015, it delivers up to 300Mbps and has been standardized as VDSL2 35b.

WAN (Wide Area Networking): A geographically distributed private telecommunications network that interconnects multiple local area networks.

WCDMA (Wideband Code Division Multiple Access): A third-generation mobile wireless technology that offers high data speeds to mobile and portable wireless devices.

Webscales: Companies—such as Google, Microsoft, and Alibaba—which are investing in Cloud technology and network infrastructure on an increasing scale to fulfill their needs for massive, mission-critical networks.

WLAN (Wireless Local Area Network): A local area network using wireless connections, such as radio, microwave or infrared links, in place of physical cables.

XG-FAST: A Nokia Bell Labs extension of G.fast technology, using even higher frequencies. Capable of delivering over 10Gbps, over 2 bonded telephone lines, over very short distances.

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, press releases as well as environmental and social information, including our Sustainability Report, Code of Conduct, Corporate Governance Statement and Remuneration Statement.

Investor Relations contacts

investor.relations@nokia.com

Annual General Meeting

Date: May 23, 2017

Place: Helsinki, Finland

Dividend

The Board proposes to the Annual General Meeting a dividend of EUR 0.17 per share for the year 2016.

Financial reporting

Our interim reports in 2017 are planned to be published on April 27, 2017, July 27, 2017 and October 26, 2017. The full-year 2017 results are planned to be published in February 2018.

Information published in 2016

All our global press releases and statements published in 2016 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 public reference facilities at 100 F Street, N.E., Room 1580, Washington, D.C. 20549.

Contact information

Nokia Head Office

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FI-02610 Espoo, Finland

FINLAND

Tel. +358 (0) 10 44 88 000
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/ TARJA SIPILÄ**
Name: Tarja Sipilä
Title: Vice President, Corporate Controller

By: **/S/ RIIKKA TIEAHO**
Name: Riikka Tieaho
Title: Vice President, Corporate Legal

March 23, 2017

This report is printed on material derived from sustainable sources, and printed using vegetable based inks. Both the manufacturing paper mill and printer are registered to the Environmental Management System ISO 14001 and are Forest Stewardship Council® (FSC) chain-of-custody certified. CPI Colour is also a Carbon Neutral Printing Company and reduces its CO2 omissions to net zero in accordance with The CarbonNeutral Protocol. This carbon offsetting supports the Uchindile Mapanda reforestation programme in Tanzania, an environmental project to establish commercial forests at two locations in Africa.

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Translation from the Finnish



Articles of Association of Nokia Corporation

ARTICLE 1 - Name

The name of the company is Nokia Oyj, in Swedish Nokia Abp and in English Nokia Corporation.

Domicile

The domicile of the company is Helsinki.

ARTICLE 2 - Object

The object of the company 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 well-being, 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.

ARTICLE 3 - Incorporation in the book-entry system

The shares of the company are incorporated in the book-entry system of securities.

ARTICLE 4 - Board of Directors

The company shall have a Board of Directors comprising a minimum of seven and a maximum of twelve members.

The term of a Board member shall begin at the closing of the General Meeting at which he or she was elected, or later as resolved by the General Meeting, and expire at the closing of the following Annual General Meeting.

The Board of Directors shall elect its Chairman and Vice Chairman for the term of the Board of Directors, or for another term resolved by the Board of Directors.

The Board of Directors shall establish its rules of procedure.

ARTICLE 5 - President

The Board of Directors shall elect the President of the company.

ARTICLE 6 - Representing the company

The Chairman of the Board of Directors alone or two members of the Board of Directors jointly are authorized to represent the company. The Chairman of the Nokia Leadership Team and the President may be authorized to represent the company alone. The Board of Directors may authorize other specifically named persons to represent the company either any two of them jointly or any one of them together with a member of the Board of Directors.

The Board of Directors may authorize persons to represent the company per procuracionem any two jointly or any one of them jointly with a member of the Board of Directors or with another person authorized to represent the company.

ARTICLE 7 - Auditors

The company shall have one auditor, which shall be an audit firm certified by the Finnish Central Chamber of Commerce.

The auditors' term shall be the fiscal year.

ARTICLE 8 - Annual accounts

The accounts of the company shall be closed at the end of each calendar year.

ARTICLE 9 - General Meeting

The Annual General Meeting shall be held at the latest on June 30 as determined by the Board of Directors. General Meetings shall be held in Helsinki, Espoo or Vantaa.

ARTICLE 10 - Notice of a General Meeting

The notice of a General Meeting must be published on the website of the company no earlier than three months prior to the record date of the Meeting under Chapter 4, Section 2, Subsection 2 of the Companies Act and no later than three weeks prior to the Meeting, provided that the date of the publication must be at least nine days prior to the aforesaid record date.

ARTICLE 11 - Voting rights and registration for a General Meeting

Shareholders shall exercise their right to vote at a General Meeting either in person or through a proxy. In order to attend a General Meeting a shareholder must notify the company by the date stated in the notice of the Meeting, which may be no more than ten days prior to the Meeting.

Unless otherwise provided in these Articles of Association or in the Companies Act, resolutions by the General Meeting shall be carried by a simple majority of the votes cast. In case of a tie, the opinion of the chairman shall prevail with the exception of elections, in which the matter shall be resolved by drawing lots.

Voting procedure shall be determined by the chairman of the General Meeting.

ARTICLE 12 - Matters to be considered at the Annual General Meeting

The Annual General Meeting shall review

1. the annual accounts, comprising an income statement, balance sheet, cash flow statement and the notes thereto, as well as the consolidated annual accounts, and
2. the auditors' report, take resolutions on
3. approval of the annual accounts, which includes approval of the Group annual accounts,
4. the use of the profit shown in the balance sheet,
5. discharging the members of the Board of Directors and the President from liability,
6. the number of members on the Board of Directors, and
7. the remuneration payable to the members of the Board of Directors and to the auditor; and elect
8. members of the Board of Directors, and
9. the auditor.

ARTICLE 13 - Obligation to purchase shares

A shareholder whose holding - either alone or together with other shareholders in a way defined hereinafter - of

the total shares of the company equals or exceeds 33 1/3 per cent or 50 per cent ("Purchasor") shall be obliged, at the request of other shareholders ("Purchasees"), to purchase their shares and securities which entitle to shares under the Companies Act, as provided in this section.

Translation from the Finnish

In calculating the percentage of shares in the company held by a shareholder, the following shares shall also be taken into account:

- shares held by a corporation which, under the Companies Act, belongs to the same group as the shareholder,
- shares held by a company which, when compiling the consolidated annual accounts according to the Accounting Act, is considered to belong to the same group as the shareholder,
- shares held by a pension fund or pension society of corporations or companies referred to above, and
- shares held by a foreign corporation or entity which - were it Finnish - would belong to the same group as the shareholder in the manner referred to above.

Where a purchase obligation is based on an aggregate shareholding, the Purchasors shall jointly and severally be obliged to purchase shares vis-à-vis Purchasees. In such a situation a claim for purchase shall be considered to be made to all Purchasors even without a separate claim to each of them.

Where two shareholders reach or exceed the threshold for the purchase obligation so that they become obliged to purchase shares simultaneously, a Purchasee may claim for purchase from both of them separately.

The purchase obligation shall not apply to shares or securities which entitle to shares which a shareholder has acquired after the arising of the purchase obligation.

Purchase price

The purchase price of the shares shall be the higher of the following:

- a) the weighted average trading price of the shares on the Helsinki Exchanges during the ten (10) business days prior to the day on which the company has been notified by the Purchasor that his 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 the Board of Directors of the company otherwise becomes aware of this;
- b) the average price, weighted by the number of shares, which the Purchasor has paid for the shares he has acquired during the last 12 months preceding the date referred to in paragraph a).

If an acquisition which has an influence on the average price is denominated in a foreign currency, the euro conversion value shall be calculated according to the official rate of the European Central Bank for the currency in question seven (7) days prior to the date on which the Board notified shareholders of their right for purchase.

The above provisions on the determination of the purchase price shall also apply to other securities to be purchased.

Purchase procedure

A Purchasor shall, within seven (7) days of the date on which the purchase obligation has arisen, notify the Board of Directors of the company in writing at the company's address. The notification shall contain details of the number of shares owned by the Purchasor and the number and price of the shares acquired during the last twelve (12) months. The notification shall also contain the address at which the Purchasor may be contacted.

The Board shall notify shareholders of the arising of the purchase obligation within 45 days of the receipt of the notification referred to above or, in the absence of such notification or where such notification fails to arrive within the specified period, of the date on which it otherwise became aware of such purchase obligation. The notice shall contain details of the date on which the purchase obligation has arisen, the basis for determination of the purchase price as far as known by the Board, and the date by which claims for purchase shall be made. Notice to shareholders shall be given in compliance with the provisions of Article 10 of the Articles of Association concerning notice of a General Meeting.

A Purchasee shall make a written claim for purchase within 30 days of the Board's notice of the purchase obligation. The purchase claim, which shall be sent to the company, shall indicate the number of shares and other securities covered by the claim. A shareholder claiming for purchase shall at the same time provide the company with possible share certificates or other documents carrying the right to shares to be transferred to the Purchasor against the payment of the purchase price.

If a claim is not made by the due date in the manner described above the shareholder shall forfeit his right to claim for purchase in the purchase situation in question. As long as purchase has not taken place a Purchasee shall have the right to withdraw his claim.

On the expiration of the period for making claims for purchase, the company shall notify the Purchasor of the claims made. The Purchasor shall, within 14 days of receipt of the notice of the purchase claims, in the manner prescribed by the company pay the purchase price against receipt of shares and securities carrying the right to shares or, where the shares to be purchased are entered in the book-entry accounts of the shareholders in question, against a receipt issued by the company. In such case the company shall be responsible for seeing that the Purchasor is without delay registered as the owner of the shares purchased through an entry in his/her book-entry account.

A purchase price which is not paid within the specified period shall accrue default interest of 20 per cent per

annum as of the date on which the purchase should have been made. If the Purchasor has, in addition, failed to observe the above provisions concerning the purchase obligation, default interest shall be calculated as of the date on which the notification should have been made.

Other provisions

The purchase obligation under this Article shall not apply to a shareholder who can prove that the threshold for the purchase obligation was reached or exceeded prior to the registration of this amendment to the Articles of Association in the Finnish Trade Register.

A resolution by a General Meeting to amend or delete the provisions of this Article shall be carried by shareholders representing not less than three-quarters of the votes cast and shares represented at the Meeting.

Disputes concerning the purchase obligation referred to above, the related right to claim for purchase and the purchase price shall be settled in arbitration proceedings in the domicile of the company, in accordance with the provisions in the Act on Arbitration Proceedings (967/92). The arbitration proceedings shall apply Finnish law.

CERTIFICATION

I, RAJEEV SURI, certify that:

1. I have reviewed this annual report on Form 20-F of Nokia Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;
4. The company's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting; and
5. The company's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company's auditors and the audit committee of the company's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

Date: March 23, 2017

/s/ RAJEEV SURI

RAJEEV SURI

President and Chief Executive Officer

CERTIFICATION

I, KRISTIAN PULLOLA, certify that:

1. I have reviewed this annual report on Form 20-F of Nokia Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;
4. The company's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting; and
5. The company's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company's auditors and the audit committee of the company's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

Date: March 23, 2017

/s/ KRISTIAN PULLOLA
KRISTIAN PULLOLA
Chief Financial Officer

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the annual report on Form 20-F of Nokia Corporation (the "Company") for the period ending December 31, 2016, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned hereby certify that to the best of our knowledge:

1. The Report fully complies with the requirements of Section 13(a) of the Securities Exchange Act of 1934; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ RAJEEV SURI

Name: RAJEEV SURI

Title: President and Chief Executive Officer

Date: March 23, 2017

/s/ KRISTIAN PULLOLA

Name: KRISTIAN PULLOLA

Title: Chief Financial Officer

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-212122, 333-211574, 333-210546, 333-210545, 333-202869, 333-202866, 333-194197, 333-194196, 333-187096, 333-179982, 333-173974, 333-157795 and 333-141674) of Nokia Corporation of our report dated March 23, 2017 relating to the consolidated financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 20-F.

/s/ PricewaterhouseCoopers Oy

Helsinki, Finland

March 23, 2017