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, 1998

Commission file number 1-13202

Nokia Corporation

(Exact name of Registrant as specified in its charter)

Republic of Finland

(Jurisdiction of incorporation)

Keilalahdentie 4, P.O. Box 226, FIN-00045 NOKIA GROUP, Espoo, Finland

(Address of principal executive offices)

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

Title of each class	*Name of each exchange on which registered*
American Depositary Shares	**New York Stock Exchange**
A Shares	**New York Stock Exchange***

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

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

Securities for which there is a reporting obligation
pursuant to Section 15(d) of the Act:
None

Indicate the number of outstanding shares of each of the Registrant's classes of capital or common stock as of the close of the period covered by the Annual Report.

A Shares 478,565,819
K Shares 127,030,745

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days.

Yes ☒ No ☐

Indicate by check mark which financial statement item the Registrant has elected to follow.

Item 17 ☐ Item 18 ☒

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INTRODUCTION AND USE OF CERTAIN TERMS

Nokia Corporation is a public limited liability company incorporated under the laws of the Republic of Finland. As used herein, except as the context otherwise requires, the term "Company" refers to Nokia Corporation and the terms "Nokia", "Nokia Group" and "Group" refer to the Company and its consolidated subsidiaries. The Company has published its consolidated financial statements in Finnish Markka and will publish its consolidated financial statements in euro for periods beginning on or after January 1, 1999. In this Form 20-F, references to "EUR" or euro are to the common currency of the European Economic and Monetary Union (EMU), references to "FIM", "Finnish markka" or "markka" are to currency of the Republic of Finland ("Finland") and references to "dollars", "U.S. dollars" or "$" are to the currency of the United States ("U.S."). Merely for convenience of the reader, this Form 20-F contains conversion of certain markka amounts into U.S. dollars at specified rates, or, if not so specified, at the rate of 5.0645 markka per U.S. dollar, the noon buying rate in New York City for cable transfers in markka as certified for customs purposes by the Federal Reserve Bank of New York (the "Noon Buying Rate") on December 31, 1998. No representation is made that the markka amounts have been, could have been or could be converted into dollars at the rates indicated or at any other rates.

In this Form 20-F, unless otherwise stated, references to:

- "A Shares" are to the Company's A Shares nominal value FIM 2.50;
- "K Shares" are to the Company's K Shares nominal value FIM 2.50;
- "Shares" are to the Company's Shares nominal value EUR 0.24. The Company's share capital will comprise only Shares following consolidation of the A Shares and K Shares effective as of April 9, 1999; and
- "shares" are to the A Shares, the K Shares and the Shares.

The principal executive office of the Company is currently located at Keilalahdentie 4, P.O. Box 226, FIN-00045 NOKIA GROUP, Espoo, Finland and its telephone number is 358-9-18071.

The Company furnishes Citibank, N.A. (the "Depositary") with annual reports containing annual consolidated financial statements and an audit opinion thereon by its independent public accountants. Such financial statements are prepared on the basis of International Accounting Standards ("IAS"). The Company's 1998 annual report to shareholders contains a reconciliation to accounting principles generally accepted in the United States ("U.S. GAAP") of net income and shareholders' equity. The Company also furnishes the Depositary with quarterly reports containing unaudited financial information. Upon receipt thereof, the Depositary generally mails all such reports to record holders of American Depositary Receipts ("ADRs") evidencing American Depositary Shares ("ADSs"). The Company also furnishes to the Depositary all notices of shareholders' meetings and other reports and communications that are made generally available to shareholders of the Company. The Depositary makes such notices, reports and communications available for inspection by record holders of ADRs and mails to all record holders of ADRs notices of shareholders' meetings received by the Depositary.

FORWARD-LOOKING STATEMENTS

Certain statements herein which are not historical facts, including, without limitation those regarding (i) the timing of product deliveries; (ii) Nokia's ability to develop new products and technologies; (iii) expectations regarding market growth and developments; (iv) expectations for growth and profitability; (v) the impact of Year 2000 issues (including the extent and timing of such issues, and the costs of compliance); and (vi) statements preceded by "believes", "expects", "anticipates", "foresees", or similar expressions, are forward-looking statements. Because such statements involve risks and uncertainties, actual results may differ materially from the results currently expected by the Company. Factors that could cause such differences include, but are not limited to (i) general economic conditions, such as the rate of economic growth in the Company's principal geographic markets or fluctuations in exchange rates; (ii) industry conditions, such as the strength of product demand, the intensity of competition, pricing pressures, the acceptability of new product introductions, the introduction of new products by competitors, changes in technology or the ability of the Company to source components from third parties without interruption and at reasonable prices and the financial condition of the Company's customers; (iii) operating factors, such as continued success of manufacturing activities and the achievement of efficiencies therein, continued success of product development or inventory risks due to shifts in market demand; (iv) the risks, costs and uncertainties (including lack of available information and difficulties in addressing and identifying Year 2000 issues) associated with Year 2000 issues as well as the failure of third party suppliers to identify, disclose and address Year 2000 issues accurately and on a timely basis; as well as (v) the risk factors specified herein under "Item 1. Description of Business — 1.7 Business Risk Factors".

EXCHANGE RATES

The following table sets forth certain information with respect to the Noon Buying Rate of U.S. dollars in terms of markka for the periods shown. The average rate means the average of the exchange rates on the last day of each month during a year.

	1994	*1995*	*1996*	*1997*	*1998*
Exchange Rates	*(in Finnish markka per dollar)*				
Rate at year-end	4.7485	4.3460	4.6030	5.4530	5.0645
Average rate	5.1777	4.3584	4.6008	5.2169	5.3433
Highest rate	5.8210	4.8165	4.8530	5.6000	5.6280
Lowest rate	4.5500	4.1920	4.3360	4.6130	4.8995

On March 25, 1999, the Noon Buying Rate was EUR 1.0871 per U.S. dollar. The Noon Buying Rate for the markka ceased to be available after January 15, 1999.

GLOSSARY OF TERMS

Access network. Network for delivery of voice, data, text and images to end-users.

ADSL (Asymmetric Digital Subscriber Line). Transmission system which supports high bit rates over existing metallic twisted pair access networks and provides a high bit rate channel toward an ATM end system and a lower bit rate channel from the ATM end system toward the network.

AMPS network. Analog cellular communications network developed and adopted in North America.

Analog. A signaling technique in which signals are conveyed by continuously varying the frequency, amplitude or phase of the transmission.

ATM (Asynchronous Transfer Mode). Switching technology for high-speed transport (up to 622 megabytes per second) and switching of various types of data, voice and video signals.

Base station. Fixed transceiver (transmitter and receiver) equipment used for communicating with mobile phones in a mobile network. A base station may cover one or more cells or a part of a cell.

Base station controller. Equipment in a mobile network for controlling call set-up, signaling and maintenance functions and the use of radio channels by one of more base stations. Base station controllers are used in GSM-based and other digital networks. In some networks the functions of a base station controller are performed by the mobile switching center.

Bluetooth. Short range radio technology expanding wireless connectivity to personal and business mobile devices enabling users to connect their mobile phones, computers, printers, digital cameras, network access points and other electronic devices to one another without cables.

CDMA (Code Division Multiple Access). A continuous digital transmission technology that uses a coding system to mix discrete voice signals together during transmission and then separates the signals at the end of transmission.

Cellular network. Mobile telephone network consisting of switching centers (digital exchanges), radio base stations and transmission equipment. A cellular telephone network services an area which is divided into a number of smaller regions called cells. This facilitates a continuous connection between the base stations and the mobile phones. The connection is maintained even if the mobile phone user moves from the area covered by one base station to the area of another base station.

Dedicated network. Telecommunications network designed for a specific user group, such as railways, oil companies and private transport agencies. Traffic can be limited to the dedicated network, or the network can be designed to permit users to access public networks.

DSL (Digital Subscriber Line). A method of transmission utilized to transmit high speed data on any existing copper line or local loop to a subscriber's telephone.

DSLAM (Digital Subscriber Line Access Multiplexer). Multiplexer that takes a number of asymmetric digital subscriber lines and concentrates them into a single ATM line.

Digital. A signaling technique in which a signal is encoded into digits for transmission.

DVB (Digital Video Broadcasting). A standard for digital satellite, cable and terrestrial broadcasting.

EFR (Enhanced Full Rate). Speech coding where the information bits first go through a preliminary channel coding and then through the basic channel coding.

ETSI (European Telecommunications Standards Institute) Standards. Standards produced by the ETSI. They contain technical specifications laying down the characteristics required for a product.

GSM (Global System for Mobile Communication). Digital cellular network operating in the 900 MHz frequency band, the frequency adopted for use in most European and Asian countries.

GSM 1800 System. GSM cellular system operating in the 1800 MHz frequency band (also referred to as PCN or PCN 1800 or DCS 1800).

GSM 1900 System. GSM-based cellular system operating in the 1900 MHz frequency band (also referred to as PCS 1900 or DCS 1900).

HSCSD (High Speed Circuit Switched Data). A channel-coding scheme that boosts data speeds in GSM networks from the current 9.6 kbit/s to 14.4 kbit/s.

IN System (Intelligent Network System). Telecommunications network architecture that permits network operators to introduce, control and manage services more effectively, economically and rapidly than is permitted by traditional network architecture.

IP (Internet Protocol). Connectionless, best-effort packet switching protocol that corresponds to the OSI (Open System Interconnection) layer 3 (network) and forms part of the TCP/IP protocol.

ISP (Internet Service Provider). A company that provides access to the Internet and World Wide Web via a fixed or mobile network.

MPT Specifications. De facto standards for analog PMR operation produced by the Ministry of Posts and Telecommunications in the United Kingdom.

MSC (Mobile Switching Center). Mobile network element which performs the switching functions in its area of operation and controls the interworking with other networks.

Microwave radios. Radio transceiver equipment using frequencies ranging from approximately 1 GHz to 100 GHz.

Network multiplexer. Device that combines two or more signals so that the signals can be transmitted simultaneously on a single carrier wave, communications channel or data channel. At the receiving end, a demultiplexer extracts each of the original signals.

NMT, NMT 450, NMT 900 (Nordic Mobile Telephone). Analog cellular system originally developed for use in Finland, Sweden, Denmark, Norway and Iceland. NMT 450 refers to the original system which operates at the 450 MHz frequency band and NMT 900 to the second generation system which operates at the 900 MHz frequency band.

PCN (Personal Communications Network). A standard for digital mobile telephone transmissions operating at a frequency of 1800 MHz (also referred to as GSM 1800).

PCS (Personal Communication Services). Digital mobile telephone network which operates at the 1900 MHz frequency band. GSM 1900 is one of the technologies used in building PCS networks (also referred to as PCS 1900 or DCS 1900).

PDC (Personal Digital Communications). Digital cellular standard used in Japan.

Platform, platform concept. A basic system on which different applications can be developed.

PMR (Professional Mobile Radio). PMR provides specialised mobile radio communication systems for professional organisations like utilities, transportation companies, harbors, police, and other public authorities.

PTT (Post, Telephone and Telegraph Administration). Administration which manages and operates postal and telecommunications services. A PTT is typically government-controlled.

SDH (Synchronous Digital Hierarchy). Transmission method which facilitates remotely managed, high-availability transport of digital signals.

SMS (short message services). Function of GSM standard that permits transmission and receipt of alpha-numeric messages of up to 160 characters among mobile phones and between computers and mobile phones. Also permits broadcasting of messages to all or a limited number of network users.

STM (Synchronous Transport Module). Information structure used to support section layer connections in the SDH. STM consists of a certain number of STM-1 frames, usually 1, 4, 16 or 64 frames. An STM-1 frame can be described as a two dimensional array of 9×270 bytes.

Switching system (digital exchange). Network element which processes an input call (signal) to an output port such as telephone users or another network.

Symbian. A joint venture aiming at creating an open and common software platform for mobile information devices, such as communicators and smart phones.

TACS (Total Access Communications System). An analog cellular communications system, developed from the AMPS system, that has been adopted in the United Kingdom and which operates in the 900 MHz frequency band.

TCP/IP (Transmission Control Protocol/Internet Protocol). Public transmission protocol originally defined by the US Department of Defence offering message routing and reliable data transmission. TCP corresponds to the OSI layer 4 (transport) and IP to the OSI layer 3 (network).

TDMA (Time Division Multiple Access). A digital transmission technology that breaks voice signals into sequential pieces of a defined length, places each piece into an information conduit at specific intervals and then reconstructs the pieces at the end of the conduit.

TETRA (Terrestrial Trunked Radio). Terrestrial Trunked Radio is an open digital trunked radio standard defined by ETSI to meet the needs of the most demanding professional mobile radio users. In the first phase the main customer groups are public safety and security authorities. TETRA is also a suitable solution for utilities and public access mobile radio operators.

VDSL (Very High Speed Digital Subscriber Line). A transmission system which aims at supporting very high bit rates over at least part of an existing copper access network. VDSL is very similar to ADSL.

WAP (Wireless Application Protocol). A global license-free and platform independent protocol designed for internet content and advanced telephony services on digital cellular phones and other wireless terminals.

WCDMA (Wideband Code Division Multiple Access). A digital transmission technology based on CDMA and planned to be used as the air interface access method in the future third generation mobile systems.

WDM (Wavelength-Division Multiplexing). Multiplexing in which several independent signals are allotted separate wavelengths for transmission over a common optical transmission medium.

PART I

ITEM 1. DESCRIPTION OF BUSINESS

1.1 General

Nokia is the world's largest mobile phone manufacturer and a leading supplier of digital mobile and fixed networks. As a broad-scope telecommunications company, Nokia also supplies multimedia equipment, satellite and cable receivers, computer monitors as well as other telecommunications related products. In 1998, Nokia was Finland's largest publicly traded company, with a market capitalization totaling FIM 356 billion ($70 billion) at December 31, 1998.

Nokia's development during the past three years has been characterized by rapid growth of its core telecommunications businesses and increasing globalization of its operations. Since 1997, sales of Nokia Telecommunications and Nokia Mobile Phones have increased by 39% and 74%, respectively. In the past three years, Nokia's international presence has increased significantly through the establishment of a worldwide network of manufacturing, distribution, sales and service operations. In 1998, Nokia supplied its products in over 130 countries worldwide.

Nokia strives for continued leadership in the fastest growing global telecommunications segments through speed in anticipating and fulfilling customer and consumer needs, quality in products and processes and building brand recognition of the Nokia name.

In 1998, Nokia's operating groups consisted of Nokia Telecommunications, Nokia Mobile Phones and Other Operations. In 1998, Nokia established Nokia Ventures Organization to foster growth opportunities outside the current scope of the existing business groups. Nokia Ventures Organization is seeking and developing areas with growth potential over the next five years. Nokia Ventures Organization currently includes two business units: Wireless Business Communications and Wireless Software Solutions. In December 1998, Nokia acquired Vienna Systems Inc. to further strengthen its growth potential in the global IP telephony market and to enhance its ability to offer new applications to Internet Service Providers (ISPs). As part of Nokia Ventures Organization, Vienna Systems specializes in IP telephony solutions. In addition, Nokia established in 1998 a $100 million Nokia Ventures fund to develop Nokia's business in the longer term.

In February 1999 Nokia signed an agreement to acquire Diamond Lane Communications Corporation. The company has developed the multi-service digital subscriber line access multiplexer (DSLAM), a device that enables Internet access speeds up to 125 times faster than current 56 kilobit-per-second modems over existing telecommunications networks. In February 1999 Nokia also signed an agreement to acquire InTalk Corporation which focuses on the development of wireless LAN access point products. InTalk designs and develops wireless LAN components and products.

Nokia Telecommunications develops and manufactures infrastructure equipment for fixed, mobile and datacom networks. It is a world-leading supplier in GSM infrastructure, including wireless data solutions. In addition Nokia Telecommunications is a significant supplier of advanced access, switching, IP network and IN solutions for fixed and mobile telecom operators and ISPs, supported by a global customer services network. In 1998, Nokia Telecommunications had net sales of FIM 26,103 million (33% of Nokia's net sales) and an operating profit of FIM 5,706 million.

Nokia Mobile Phones is the world's largest manufacturer of mobile phones, based on unit sales. Nokia is a pioneer in the development of mobile phones and wireless data products and manufactures a complete range of cellular phones for all major digital and analog standards worldwide. Nokia introduced 17 new phone models and other wireless products during 1998, addressing all major user segments in various markets. In 1998, Nokia Mobile Phones had net sales of FIM 47,984 million (60% of Nokia's net sales) and operating profit of FIM 9,158 million.

Other Operations consists of Nokia Communications Products, Nokia Ventures Organization, Nokia Research Center and general Group functions. Nokia Communications Products consists of two operating divisions, Nokia Multimedia Terminals and Nokia Industrial Electronics. Nokia Multimedia Terminals develops and markets digital satellite, cable and terrestrial receivers for broadcasting and interactive multimedia applications, focusing on DVB and Internet protocols. Nokia Industrial Electronics develops and manufactures computer and work station monitors including applications for multimedia communications and new technology displays. In addition, the division manufactures battery chargers and other power supply applications for mobile phones. Other Operations also included two businesses which were sold in 1998: a car electronics business sold in March 1998 and a component manufacturing company sold in August 1998. In 1998, Other Operations had net sales of FIM 6,029 million (7% of Nokia's net sales) and suffered an operating loss of FIM 65 million.

1.2 Business Strategy

Nokia's business objective is to strengthen its position as a leading systems and equipment supplier in the rapidly evolving global communications industry. To achieve this, Nokia's strategy focuses on:

- Leadership in the most attractive global communications segments.
- Speed in anticipating and fulfilling evolving customer and market needs.
- Global business approach.
- Strong consumer recognition and leverage on the Nokia brand.

Leadership in the most attractive global telecom segments. Nokia's rapid growth has been based on its ability to identify and exploit new market segments that experience faster growth than the industry as a whole. By expanding into these segments at the initial stages of their development, Nokia has established itself as a leading player in wireless communications. Nokia's cellular network introductions have included NMT 450 and NMT 900 analog cellular networks, and GSM 900, 1800 and 1900 digital cellular networks. The third generation WCDMA solution co-developed by Nokia has been selected for the future third generation wireless system in Europe, Japan and certain other Asian countries. In digital trunking networks, Nokia was selected to deliver the world's first operative TETRA Network. Similarly, Nokia's early entry into the mobile phone market permitted it to obtain the leading position as a supplier of mobile phones. Nokia has enhanced this position by continuously introducing new wireless services. Nokia has also pioneered various technologies such as EFR voice codec, WAP for Internet content, Bluetooth short-range radio technology, expanding wireless connectivity to personal and business mobile devices and other advanced new services on digital cellular phones and other wireless terminals. Nokia intends to continue its strategy of targeting and entering market segments that it believes will experience rapid growth, such as data networking for both fixed and wireless communications.

Speed in anticipating and fulfilling evolving customer and market needs. Nokia has established itself as a leader in high value-added communications products and solutions through focusing on its ability to anticipate and understand its customers' needs and the development of cost-effective solutions to meet those needs. Nokia employs open standards in its product strategy in order to promote flexibility and speed as well as open competition. In its strategy, the Company also focuses its product development in those countries which lead the global development of a particular technology or business. Such countries in 1998 were Japan in the area of third generation wireless communications technology and the United States in data communications technology and applications. In addition, Nokia follows closely developments in China which currently is the fastest growing telecommunications market in the world.

Global business approach. In the past several years, Nokia has aggressively pursued opportunities to expand its business globally. As a result of its efforts, Nokia's network systems, equipment and wireless terminals are sold throughout the world. Nokia's main manufacturing facilities are currently situated in nine countries, personnel in some 45 countries and it supplies its products in over 130 countries worldwide. Nokia's strategy is to continue its focused pursuit of global business opportunities by having a strong local presence in growing markets.

Recognition of the Nokia brand. The Nokia brand is associated with well-designed, high quality, technologically advanced yet user friendly products and strong customer service. Nokia has invested in building awareness for Nokia as the leading brand in wireless communications. Nokia will continue these efforts to sustain and enhance recognition of the Nokia brand through the effective use of advertising, sponsorship and other activities in all principal markets.

1.3 Nokia Telecommunications

Nokia is the world's second largest supplier of GSM networks and a significant supplier of fixed networks for voice and data. Nokia Telecommunications delivers infrastructure equipment and systems to meet the diverse needs of telecom operators and ISPs worldwide. Nokia Telecommunications provides switching platforms, fixed and radio access solutions, wireless data, datacom and IP solutions, network management and IN solutions as well as related customer services. Nokia Telecommunications expanded into new markets and strengthened its position globally during 1998 by developing high-quality systems and products designed for the most competitive environments.

The following table sets forth net sales, operating profit and average number of employees for Nokia Telecommunications for the periods indicated.

Net Sales, Operating Profit and Average Number of Employees

	Year ended December 31,		
	1996	*1997*	*1998*
	(FIM in millions, except average number of employees)		
Net Sales	13,333	18,826	26,103
Operating Profit	2,982	4,053	5,706
Average Number of Employees	12,558	15,710	19,280

The following table sets forth the regional distribution of net sales for Nokia Telecommunications for the periods indicated.

Percentage of Net Sales by Region

	1996	*1997*	*1998*
Finland	9%	7%	5%
Other European Countries	57	53	64
Americas	4	4	3
Asia-Pacific	28	35	27
Other Countries	2	1	1
Total	100%	100%	100%

The Telecommunications Industry

The global telecommunications industry is currently experiencing a period of profound change resulting from extensive deregulation of the provision of telecommunications services and rapid, far reaching developments, particularly in the areas of digital and datacommunications technologies. The combination of deregulation and technological change has permitted the entry of new telecommunications operators in an industry that has traditionally been dominated by PTTs. In order to compete successfully, these newly established operators require network solutions and equipment that will enable them to provide innovative new services on a cost-effective basis. Competition from new operators has, in turn, led PTTs to improve their own capabilities, thus further increasing demand for competitive, high performance telecommunications equipment.

Deregulation and new technology have facilitated the establishment of new telecommunications networks and services. Mobile, fixed and data services, which traditionally have been operated separately, can now be served by a single operator in packages best suited to specific customer needs. Nokia's management believes it is well positioned as a strategic partner to those operators moving into the new age of telecommunications.

The growth of the cellular industry has been rapid over the last decade. The level of cellular penetration in Western European countries, measured as the percentage of the population of such countries that uses cellular phones, currently stands at approximately 24%, compared to around 14% last year and is expected to continue to grow in the future. The level of cellular penetration in Nordic countries was on average between 40% and 50% in 1998.

Cellular Network Technology

Cellular networks transmit either analog radio signals or digital radio signals. Analog radio signals are modulated proportionately by the strength and frequency of audio sounds entering a telephone mouthpiece. The first generation cellular networks were based on analog technology. Since the early 1990's cellular operators have been using cellular networks based on digital technology. In digital cellular networks, audio sounds entering a telephone mouthpiece are digitally coded and then used to modulate a series of short impulses that are transmitted between handsets and base stations. Compared to analog cellular networks, digital cellular networks provide users with improved average sound quality and enhanced data transmission capabilities. Digital cellular networks block communications from unauthorized handsets thus reducing theft of services that have been experienced by analog cellular networks. Digital cellular networks also have greater capacity than analog cellular networks using comparable bandwidths.

The basic infrastructure of a digital cellular network consists of a mobile switching center (or exchange), radio base stations, base station controllers and transmission systems. A cellular network services an area, which is divided into a number of cells. A radio base station, containing a number of transmitters and receivers, is installed in each cell. Radio base stations are connected to base station controllers which, in turn, are connected to a mobile switching center. Such mobile switching centers are then connected to other mobile switching centers in the same network and to other fixed or mobile telephone networks.

The first cellular networks were established in the early 1980s based on analog technology. Since that time, a number of different analog systems have been developed for use in various geographic markets. In Europe, the two most widespread analog systems are the NMT system and the TACS system. The North American analog standard is the AMPS system, the U.K. analog standard is the TACS system and the Japanese analog system, J-TACS, is a variation of the U.K. standard. However, analog networks are increasingly being replaced with digital cellular systems worldwide.

Most digital cellular systems use TDMA transmission technology, which can be implemented using various standards, including the GSM 900 standard. GSM is the world's leading digital standard. At the end of 1998 there were 322 operational GSM networks in 118 countries worldwide.

The widespread adoption of GSM has facilitated roaming among GSM 900 systems. International roaming permits subscribers to a cellular network in one country to make and receive telephone calls over cellular networks with which the user's network has an international roaming agreement. As GSM 1800 and GSM 1900 networks have not been developed in as many countries as GSM 900 networks, international roaming services for GSM 1800 or GSM 1900 users are less widespread. However, dual band networks operating on GSM 900 and 1800 frequencies enable more widespread roaming services.

Most countries have both analog and digital-based cellular networks. As a result of the adoption of the GSM standard throughout Europe, all digital second generation cellular networks installed in Europe will be based on either GSM or GSM 1800 standards. In addition, a significant number of new networks to be installed in the Asia-Pacific region, the Middle East and the United States will be GSM, GSM 1800 or GSM 1900 networks.

Nokia continues to invest in further developing the strengths of GSM as progression to the future third generation cellular networks accelerates. Nokia proposed the ETSI-accepted standard combining the new enhanced WCDMA (Wideband Code Division Multiple Access) radio technology based on further development of a GSM core network as the optimal future third generation technology solution. Nokia is working in close cooperation with international standardization bodies and the Japanese operator, NTT Mobile Communications Network, Inc. ("NTT DoCoMo") to advance this technology which will provide significant capacity improvements, enable high speed mass communications and facilitate the introduction of an extensive range of personalized multimedia services.

Nokia is actively involved in and strongly promotes the creation of open standards, resulting in even higher global volumes, economies of scale and rapid migration towards the wireless information age. The future third generation cellular networks are expected to be operational in the early years of the next millennium.

Business Divisions

Nokia Telecommunications is organized into four competence-based divisions based on the market served. Nokia management believes that this enhances Nokia's ability to identify changing end-user needs and develop the right solutions for its customers. The four divisions are Network Systems, Radio Access Systems, IP and Access Solutions, and Customer Services

Network Systems

Network Systems is responsible for developing and marketing various service and system platforms for fixed and mobile networks as well as data communications networks. It also develops integrated fixed and mobile network management solutions that combine both switching and access to telecommunication operators. Nokia believes that these services will become increasingly important as operators seek to combine mobile, fixed and data services in a single package.

The system platforms include Nokia's DX 200 switching systems which are used by fixed and mobile operators in 36 countries (CIS countries counted as one), IN systems and Nokia NMS Network Management Systems, as well as analog (MPT 1327-based) and digital (TETRA-based) PMR systems. In addition, as of 1999 Network Systems comprises Complementary Systems unit, formerly part of Radio Access Systems.

In relation to total network solutions combining switching and access infrastructure, Nokia has achieved the position as one of the two leading GSM network suppliers and has also achieved success in certain global deregulated fixed network markets.

Nokia continues to be the leading supplier of MPT 1327-based and TETRA (Terrestrial Trunked Radio) systems. In 1998, Nokia signed the world's first nation-wide commercial TETRA network with Dolphin in UK. In addition, Nokia signed a contract with Dolphin Telecom for the supply of the first nationwide, commercial TETRA network in France. Also in 1998, Nokia, as part of the KNT consortium, was chosen to provide a TETRA nationwide network in Belgium. Nokia's other TETRA customers include the Finnish Ministry of the Interior, Helsinki City Energy Company, ElTele Öst of Norway and TeleDanmark in the Netherlands. Nokia is participating in the UK-based Quadrant Consortium, which is designing and planning new digital radio services for use by the country's emergency services. Nokia and Austrian operator Well.COM have signed an agreement for the delivery of a complete TETRA professional mobile radio network, for public safety and security organizations.

Radio Access Systems

Radio Access Systems develops and markets GSM base station subsystems and NMT radio systems including base stations, base station controllers and wireless transmission products to mobile operators. The division is also responsible for the development of future generations of mobile system standards. Nokia is the leading base station supplier in Europe.

By the end of 1998, Nokia had supplied NMT 450 and NMT 900 cellular equipment to 40 operators in 24 countries.

The growth of digital GSM cellular networks continued throughout 1998, which on December 31, 1998 totaled 322 networks in 118 countries. At the end of the year Nokia had supplied GSM networks to 78 operators in 37 countries, representing a market share of approximately 30%, based on the number of operational networks.

Nokia is one of the world's leading suppliers of GSM 1800 networks, supplying 20 of the 47 GSM 1800 networks established by the end of 1998. The division entered into eight new agreements in 1998 with, among others, DiAx in Switzerland, Telekom Cellular in Malaysia, and Tele Danmark in The Netherlands. Nokia Telecommunications also signed expansion agreements with several existing customers. To meet operators' increasing capacity requirements, Nokia launched a High Capacity GSM system including its new Nokia MetroSite base station solution, high capacity switching products and related customer services.

IP and Access Solutions

IP and Access Solutions was formed in February 1999 by combining the former Fixed Access System business of Nokia Telecommunications with both internal and acquired IP and datacom products and competencies, including the Diamond Lane Communications Corporation. Diamond Lane Communications Corporation, founded in 1995, was one of the first companies in the world to offer commercially digital subscriber line data access and a leader in xDSL solutions, enabling a variety of high-speed data applications via its SpeedLink system, a digital subscriber line access multiplexer based on ATM standards. IP and Access Solutions focuses on providing access and transmission solutions primarily for telecommunications operators and ISPs. The division also supplies dedicated networks for use by public utilities and other customers whose telecommunications systems require their own independent network.

Nokia Telecommunications competes in several markets for the supply of digital transmission systems for use in both fixed and mobile telecommunications networks. Nokia Telecommunications' access and transmission systems include narrow and broadband access systems, the SDH/WDM transport system, data communication equipment and network management systems. Nokia's access and transmission systems are sold to both established and new operators of fixed and cellular networks. In 1998 Nokia Telecommunications provided Telecom New Zealand with a complete broadband solution for the world's first nationwide ADSL and IP network.

The division's access and transmission systems are sold worldwide.

Nokia was one of the first companies to introduce transmission systems based on SDH technology. SDH technology uses optical transmission, which substantially improves the efficiency of telecommunications networks. SDH technology enables network operators to increase their transmission capacity significantly while allowing the use of advanced network management which results in additional network efficiencies. Nokia has sold SYNFONET SDH/WDM systems, incorporating the full range of products from the compact STM-16 to the space-saving SYNFONET Access Node, to approximately 140 customers in over 30 countries.

Nokia was one of the first suppliers to introduce full V5-based access network solutions supporting open interfaces into fixed networks. Nokia's vendor-independent access systems for narrowband and broadband aim to provide operators with highly scaleable, flexible solutions for basic telephony, ISDN and semi-permanent leased lines that enable the operator to provide quality, cost-efficient services. Nokia has supplied its access solutions to more than 10 customers.

Customer Services

Customer Services provides ancillary equipment and support services necessary for both cellular and fixed operators to build, operate and develop their networks and business.

In March 1998, the division employed more than 4,000 staff in some 40 customer service centers worldwide. Local expertise is provided from these centers based in eight service areas around the world. This global structure, combined with local resources, allows Nokia Telecommunications to establish operations quickly in new markets and where customer support is needed.

In 1999, Nokia Customer Services comprises four main units, Implementation Services, Productivity Services, Technical Support Services and Customer Training. These units have the capability to provide all elements necessary for building and expanding a telecommunications network, efficiently operating it and enhancing an operator's business performance.

The Customer Services division assists operators with the rapid implementation and ongoing maintenance of their networks and continuously explores ways to enhance these networks in order to meet end user demands for sophisticated services.

Research and Development

Software is a vital component of telecommunications equipment, providing the majority of its added value. Intensive research and development in software is a critical aspect of Nokia's success in the development of telecommunications systems and equipment. Nokia Telecommunications' research and development expense was FIM 3.4 billion, FIM 2.6 billion and FIM 1.9 billion in 1998, 1997 and 1996, respectively. As of December 31, 1998, Nokia Telecommunications employed 7,097 persons in research and development (more than one-third of the total workforce of Nokia Telecommunications). The majority of these employees are software engineers or software specialists.

Nokia Telecommunications' research and development efforts are designed both to facilitate the timely introduction of new products and to enhance and upgrade existing products in order to meet the needs of operators and ISPs. Several of Nokia Telecommunications' products are based on common platforms designed by Nokia that are augmented with hardware and software designed to meet specific service requirements. Nokia's use of standardized components enables it to avoid the extensive research and development costs necessary to develop proprietary hardware. For example, Nokia uses Intel's industry standard processors in its DX 200 digital exchanges, thus avoiding the costs involved in developing its own proprietary processor technology.

Nokia Telecommunications augments its internal research and development programs by entering into strategic alliances with other leading industry participants. In February 1999 Nokia and InterDigital Communications Corporation announced a long-term co-operation agreement involving the development of new technology for third generation wireless telecommunications products designed for high data rate applications, such as Internet access.

In 1998, ETSI (European Telecommunications Standards Institute) selected WCDMA as the air interface solution for Europe's third generation mobile communications. Nokia continued to develop and promote WCDMA air interface to provide wideband wireless multimedia capabilities over evolving GSM core networks. In February 1999, Nokia completed the first WCDMA call through a public switched telephone network, from its test network in Finland.

Production

Nokia Telecommunications has ten main production facilities, four in Finland, one in the United Kingdom, one in the United States and four in China. Nokia's factories in Finland manufacture base stations, transmission equipment and switching systems. Nokia's U.K. factory located in Camberley, produces GSM 1800 base stations. Nokia's U.S. factory, located in Fort Worth, is dedicated to the production of GSM base stations. Nokia's factories in China are in Beijing and Guilin City. The two Beijing factories manufacture mobile switching centres, digital switches and base stations, and the Guilin City factory manufactures optical terminal equipment. In addition, Nokia has started production of base stations in Suzhou.

Nokia Telecommunications also has a number of customer service centers located in key markets worldwide that provide system integration, installation, commissioning, training, maintenance and other services.

Nokia sources certain components for its telecommunications systems from a single or a small number of selected suppliers. Such business relationships are highly stable and typically involve a high degree of cooperation with respect to research and development, product design and manufacturing.

Order Inflow

Consistent with industry practice, Nokia manufactures its telecommunications systems on an order-by-order basis. In 1998, Nokia Telecommunications' order inflow was approximately FIM 30 billion, an increase of 30% compared to its order inflow in 1997.

1.4 Nokia Mobile Phones

Nokia Mobile Phones began operations in 1979 and is now the world's largest mobile phone manufacturer based on total unit sales. In 1998, Nokia sold a total of 40.8 million mobile phones. Nokia is the global leader in digital phones and pioneering wireless data products. Nokia's handset portfolio covers all major analog and digital standards in over 130 countries worldwide. Nokia's mobile phones are sold primarily under the Nokia brand name and may also be co-branded with operator brands.

The following table sets forth net sales, operating profit and average number of employees for Nokia Mobile Phones for the periods indicated.

Net Sales, Operating Profit and Average Number of Employees

	Year ended December 31,		
	1996	*1997*	*1998*
	(FIM in millions, except Average number of employees)		
Net Sales	21,579	27,643	47,984
Operating Profit	1,431	3,837	9,158
Average Number of Employees	10,927	12,631	16,064

The following table sets forth the regional distribution of net sales for Nokia Mobile Phones for the periods indicated.

Percentage of Net Sales by Region

	1996	*1997*	*1998*
Finland	3%	3%	2%
Other European Countries	46	44	43
Americas	24	28	32
Asia-Pacific	23	20	20
Other Countries	4	5	3
Total	100%	100%	100%

The Mobile Phone Industry

The mobile phone industry is dominated by several large manufacturers who, based on industry estimates, collectively hold approximately 85% of the worldwide market for mobile phones. These manufacturers include Alcatel, Ericsson, Mitsubishi, Motorola, NEC, Nokia, OKI, Panasonic, Philips, Samsung, Siemens and Sony. The balance of the industry is made up of a number of smaller manufacturers.

Competition in the mobile phone industry is primarily based on price, technological sophistication, brand recognition and the ability to offer mobile phones with different features for various consumer segments. In addition to providing technologically sophisticated products, successful competitors must have effective research and development programs, flexible production capabilities, highly efficient manufacturing and logistics capabilities, with economies of scale and efficient marketing and distribution. The establishment of extensive distribution channels, advertising programs and other marketing and brand promotion efforts have also become increasingly important as mobile phone market penetration increases worldwide. Distribution channels which permit rapid delivery and the provision of customer services are important for all models of mobile phones.

The average mobile phone price has declined throughout the industry by approximately 15% to 20% annually for the last several years. In contrast to the general price declines, the total size of the global market for mobile phones has increased significantly in the past several years, with the number of new subscribers increasing between approximately 50% and 60% per year. In addition, wide price variations have existed between newly introduced mobile phones which incorporate the latest technology and older, less technologically sophisticated models. The total size of the global market for mobile phones continued to increase in 1998 with the number of subscribers exceeding 300 million, an increase of approximately 50% compared to 1997. In addition, product life cycles are becoming shorter with the acceleration of technology developments and the broadening of consumer needs. Nokia seeks to benefit from this trend through the continuous development and introduction of new models and product categories. Nokia is the global market leader with 40.8 million phones sold in 1998 of the estimated total market volume of approximately 165 million.

Nokia seeks to offset the effect of declining mobile phone prices by, among other actions, increasing the volume of mobile phone sales, reducing mobile phone manufacturing and logistics costs and maintaining average price levels through frequent introduction of new mobile phones with improved features and operating efficiencies. See "— 1.7 Business Risk Factors".

Nokia management believes that rapid, innovative and regular new product introductions are critical in order for Nokia to maintain its leading position in the global market for mobile phones. Such introductions include both new versions of existing products and completely new models. Depending on products, it generally takes Nokia from less than a year to two years to develop a new product line from the research stage to final production.

In 1998, digital products accounted for over 80% of Nokia Mobile Phones' total sales volume. Digital standards continued to dominate in Europe, gained momentum in the Asia-Pacific region, and made significant progress in the growing Latin American market and in the multi-standard U.S. environment.

Products

Nokia offers mobile phones for all existing major digital and analog standards. Nokia was the first mobile phone manufacturer simultaneously to introduce digital mobile phones for the world's major digital standards: GSM, DCS, TDMA and the Japanese digital system. In 1998, Nokia introduced 17 new wireless handsets for several standards worldwide.

Nokia's mobile phone portfolio consists of products designed to address different needs, not only in terms of price but more importantly in terms of features and functionality. Nokia has implemented its "technology with a human touch" approach in developing products that emphasize usability, reliability and design. During 1998, Nokia began to sell its new generation 6100 series of digital phones for all GSM standards that incorporate several industry-first features including a graphical user interface, stand-by time up to 450 hours and personal adaptation capabilities with a Profiles function and Caller groups. The Nokia 6100 product family supports Half Rate, Full Rate and Enhanced Full Rate voice codecs. The different voice codecs give operators the opportunity to differentiate their services according to the desired level of service. The Enhanced Full Rate provides higher than standard speech quality, whereas Half Rate provides more capacity but with lesser quality. Full Rate is a standard voice codec.

The growing subscriber base and the expanding upgrade market have made mobile phones the world's largest consumer electronics industry in terms of unit sales, leading into an increasingly segmented market. To exploit this development, Nokia added several new digital models to its mobile phone product portfolio in 1998.

During 1998, Nokia started volume deliveries of the Nokia 6110, 6130 and 6190 models for GSM which were launched in late 1997 and the deliveries of the Nokia 2170, a CDMA 1900 handset for the U.S. market. Nokia also started deliveries of the dual mode (AMPS 800/TDMA 800) Nokia 6120 and the trimode (AMPS 800/TDMA 800/TDMA 1900) Nokia 6160 versions in the North and South American markets.

To address the mass consumer market, Nokia introduced the Nokia 5110 and 5130 models for GSM 900 and 1800 respectively, with changeable color covers. Nokia also introduced the second generation Nokia 9110 Communicator, a mobile phone with integrated data communications, and the Nokia 8810 premium lifestyle phone, both for GSM 900. Nokia also launched an inductive loopset for the Nokia 6100 and 5100 series phones allowing a person who is hard of hearing easier use of a mobile phone, and began deliveries of a new mobile phone model of the Japanese PDC standard, incorporating a voice activation feature. In addition, Nokia introduced the Nokia 5190, a GSM 1900 model, and the Nokia 5120 dual mode and the Nokia 5160 trimode models for the American (North and South) market. Nokia also introduced a number of new analog mobile phones, including the Nokia 650, the world's smallest phone for NMT 450 standard, a new Nokia RinGo model for ETACS networks to the European markets and the Nokia 282 to the American markets.

In 1999, Nokia introduced the Nokia 7110, the world's first GSM phone that is fully WAP compliant.

Nokia mobile phones are primarily sold under the Nokia brand name and are also co-branded with operator brands and in some cases are also distributed under operator brand names through leading mobile phone distributors. Nokia typically sells mobile phones to dealers, network operators and service providers who offer a package of communication services to end-users. Such packages usually include a subscription to the communication network and the services offered thereby, as well as the mobile phone.

Research and Development

The principal value-added component in mobile phones is computer software. Thus, like the market for telecommunications systems, success in the mobile phone industry requires continuous development of new software. Effective research and development is vital to remain competitive in the industry. Research and development expenditure by Nokia Mobile Phones was FIM 3.1 billion, FIM 1.7 billion and FIM 1.4 billion in 1998, 1997 and 1996, respectively. As of December 31, 1998, Nokia Mobile Phones employed 4,596 persons in the area of research and development (more than one-fourth of the total workforce of the business group).

Nokia's research and development strategy involves a two-stage process. First, Nokia develops a standard platform incorporating characteristics and components that are often common across product lines. This platform includes industry standard components, such as microprocessors and semiconductors, which are purchased from outside suppliers. The second stage involves the development of high value-added software and radio technology designed according to particular system standards. This two-stage strategy enables Nokia Mobile Phones to offer a full product range covering all major digital and analog standards with the minimum amount of specialization of components. As a result of this strategy, Nokia is able to source most of its components for its mobile phones from outside suppliers, while concentrating its efforts primarily on the development of high value-added software.

In 1998, Nokia acquired the Germany-based GSM terminal research and development unit of Matra Nortel Communications to enhance its telematics products related research and development.

Nokia management believes that the mobile phone industry will be characterized by increasingly diverse product lines in the future, as a result of the introduction of new product standards and the development of different product features tailored to the specific needs of new user groups. Future research and development challenges will include the development of mobile phones for the future third generation digital cellular standards and the introduction of new products incorporating data transmission applications.

Production

Nokia Mobile Phones currently operates eight manufacturing plants in seven countries. Nokia's U.S. plant, located in Fort Worth, Texas, primarily supplies the American markets. Two European plants, located in Salo, Finland and Bochum, Germany, principally supply the European market and non-European countries that have adopted European mobile phone standards. Nokia's plants in China and South Korea mainly supply the Asian markets, excluding Japan, which is supplied by the Salo factory in Finland. In addition, Nokia manufactures mobile phones in Mexico for the American market and has a manufacturing joint venture in Brazil to supply the South American market. In 1998 Nokia announced that it will establish a mobile phone manufacturing plant in Komaróm, Hungary in 1999.

In the past several years, Nokia has made significant capital expenditures for equipment required to automate further its mobile phone manufacturing facilities. Each of Nokia's mobile phone plants contains state-of-the-art technology and has a high degree of automation. Although Nokia's plants generally manufacture in accordance with the technical standards of local geographic markets, each plant is capable of providing mobile phones for most of the world's major standards. As a result of this capability, Nokia is able to respond rapidly to the needs of different geographic markets. Production is also coordinated with product development in order to maximize the efficiency of existing production equipment.

Consistent with industry practice, Nokia sources certain components for its mobile phones from a number of suppliers. Such business relationships are highly stable and typically involve a high degree of cooperation with respect to research and development, product design and manufacturing.

Nokia manages its inventory of raw materials to achieve the level of production required to meet demand for its products, while minimizing inventory carrying costs. The inventory level of raw materials maintained by Nokia is a function of a number of factors, including, among others, estimates of (i) demand for each product category; (ii) product price levels; (iii) the availability of raw materials; (iv) raw material price levels and, (v) the rate of technological change. From time to time, Nokia's inventory levels in certain raw materials may exceed actual requirements.

1.5 Other Operations

Other Operations consists of Nokia Communications Products, Nokia Ventures Organization, Nokia Research Center and general Group functions. Nokia Communications Products supplies multimedia equipment, satellite, cable and terrestrial receivers, computer monitors and other telecommunications related products through two operating divisions, Nokia Multimedia Terminals and Nokia Industrial Electronics. Nokia Multimedia Terminals develops and markets digital satellite, cable and terrestrial network terminals for broadcasting and interactive, multimedia applications, focusing on Digital Video Broadcasting (DVB) and Internet protocols. Nokia Industrial Electronics develops and manufactures computer and work station monitors including applications for multimedia communications and new technology displays, as well as battery chargers and other power supply applications for mobile phones. Operating income and expenses for Nokia Communications Products, Nokia Ventures Organization, Nokia Research Center and general Group functions are also reported under Other Operations.

The following table sets forth net sales, operating profit (loss) and average number of employees for Other Operations for the periods indicated.

Net Sales, Operating Profit (Loss) and Average Number of Employees

	Year ended December 31, 1996	1997	1998
	(FIM in millions, except average number of employees)		
Net Sales	5,197	7,239	6,029
Operating Profit (Loss)	(147)	564	(65)
Average Number of Employees	8,281	7,149	5,747

Business Rationalization

In 1998, Nokia sold LK-Products, a company manufacturing telecommunications components, as well as its car electronics business. Nokia also outsourced the manufacturing of its multimedia terminals to SCI Systems Inc.

Divisions

Nokia Multimedia Terminals

Nokia is a pioneer in digital satellite cable and terrestrial network terminals for interactive multimedia applications for business and residential users. The division's strategy is to utilize its expertise in digital signal processing to develop versatile systems that meet operators' need to deliver end-user services via satellite, terrestrial and telecommunications cable networks. Nokia markets its multimedia terminals in Europe and in the Asia-Pacific region.

Nokia Industrial Electronics

The Industrial Electronics division develops and manufactures computer and workstation monitors, including applications for professional desktop communication and new technology displays.

The Display Products business manufactures a wide range of computer monitors in different screen sizes, characterized by ergonomic designs and high quality picture performance. In 1998, Nokia introduced several new display products and extended its flat panel product range.

In 1998, Nokia's Industrial Electronics division was a significant manufacturer of quick chargers for mobile phones globally.

Production

Nokia's Other Operations group currently operates manufacturing facilities in Finland, Hungary and Mexico. In 1998, Nokia announced that it will move all Finland-based display manufacturing to its factories in Hungary and Mexico.

Research and Development

Annual research and development expenditure amounted to approximately FIM 0.4 billion, FIM 0.3 billion and FIM 0.2 billion in 1998, 1997 and 1996, respectively. In the Multimedia Terminals division product development focuses on broadband digital video, audio and data services, including television and interactive services. Research and development facilities include the facilities in Sweden, Finland and Germany. Strong cooperation with external software developers is essential to ensure flexibility and fast time to market. Research and development in the Nokia Industrial Electronics division is focused on the development of products with reduced power consumption, low magnetic emissions and enhanced ergonomic features and development of videoconferencing systems. The Nokia Industrial Electronics division works in close cooperation with its OEM customers to develop new customized products.

In 1998, Nokia acquired the software company UID (User Interface Design) to strengthen its development of multimedia terminals.

1.6 Competition

Nokia operates in a highly competitive industry and its competitors include companies with greater resources than Nokia. See "— 1.7 Business Risk Factors — Competition".

1.7 Business Risk Factors

Set forth below is a description of certain factors that may affect the Group's business and results of operations from time to time.

Mobile Phones Prices

The average mobile phone price has declined substantially during the last several years. Such declines have, in the past, adversely affected the Group's results of operations, particularly in the last quarter of 1995 and the first half of 1996. Nokia seeks to offset the effect of declining mobile phone prices by, among other actions, increasing the volume of mobile phone sales, reducing mobile phone manufacturing costs and maintaining average price levels through frequent introduction of new mobile phones with improved features and operating efficiencies. There can be no assurance, however, that such actions will continue to be successful or that future declines in mobile phone prices will not adversely affect the Group's results of operations in future periods. See "— 1.4 Nokia Mobile Phones" and "Item 9. Management's Discussion and Analysis of Financial Condition and Results of Operations — Results of Operations".

Competition

The markets for Nokia's products are intensely competitive. Some of Nokia's competitors are larger than the Group and may have greater resources than the Group with which to pursue manufacturing, marketing and distribution of their products, as well as research and development and new product introductions. In order to achieve the technological advances necessary to supply products which reflect the latest technology, Nokia must make significant investments in research and development. Given the relative size of Nokia compared to some of its major competitors, Nokia's research and development expenses in absolute terms are generally smaller than those of its larger competitors, and this could put Nokia at a competitive disadvantage. Historically, however, Nokia's well-coordinated research and development efforts have enabled Nokia to maintain a position at the forefront of the technological advances in mobile phones and cellular telecommunications equipment. Nokia's future success will depend upon its ability to maintain this position through effective research and development and effective allocation of resources.

Nokia may also encounter increased competition from new market entrants. There can be no assurance that competitors will not take actions, including among other things, new product introductions, substantial price discounting, vendor financing of telecommunications infrastructure or the creation of strategic alliances, that could adversely affect the Group's results of operations in future periods.

Nokia competes in different product markets to various degrees on the basis of a number of factors, including, among other things, price, technical performance, product features, availability, product quality and sales and technical support, and brand recognition. The Group's ability to compete successfully depends on elements both within and outside of its control, including, among other things, successful and timely development of new products, product performance and quality, manufacturing efficiency, product availability, customer service, pricing, industry trends and general economic factors.

Exchange Rate Fluctuations

Nokia operates globally and is thus exposed to foreign exchange risk. Nokia's policy is to monitor and hedge its exchange rate exposure, and it manages its operations to mitigate, but not eliminate, the positive or negative impact of exchange rate fluctuations. There can be no assurance, however, that exchange rate fluctuations will not adversely affect the Group's results of operations in future periods. See "Item 9. Management's Discussion and Analysis of Financial Condition and Results of Operations — Exchange Rates" and "Item 9A. Quantitative and Qualitative Disclosures About Market Risk."

In addition to the effect of exchange rate fluctuations on Nokia's results, an investor's return in U.S. dollars from an investment in ADSs or Shares may be affected by depreciation of the Finnish markka, because the value of dividends and other distributions paid in Finnish markka would decline as the value in the U.S. dollars of the Finnish markka declines.

Dependence on Limited Sources of Supply

Nokia's manufacturing operations depend upon obtaining adequate supplies of raw materials on a timely basis. Nokia's principal raw materials are electronic components, such as semiconductors, microprocessors, micro controllers and memory devices, which have a wide range of applications in the Group's telecommunications products. In addition, Nokia has outsourced some of its manufacturing to third parties. From time to time, suppliers may extend lead times, limit supplies or increase prices due to capacity constraints or other factors. The Group's results of operations would be adversely affected if it were unable to obtain adequate supplies of raw materials or outsourced products in a timely manner or if there were significant increases in the related costs.

New Product Development; Technological Change

The market for Nokia's products is characterized by rapidly changing technologies. Therefore, the Group's success is highly dependent upon its ability to develop complex new products on a cost-effective basis, to introduce them in the marketplace on a timely basis, and to achieve wide market acceptance thereof. Nokia has committed and intends to continue to commit substantial resources to the development of new products. Because new product development commitments must be made well in advance of sales, however, new product decisions must anticipate both future demand and the technology that will be available to supply such demand. Delays in developing new products with anticipated technological advances or in commencing volume shipments of new products may have an adverse effect on the Group's business. In addition, there can be no assurance that new products, if introduced, will gain market acceptance or will not be adversely affected by new technological changes or new product announcements by Nokia's competitors.

Manufacturing Operations

Nokia's manufacturing operations are complex, require advanced and costly equipment and are continuously being modified in an effort to improve manufacturing efficiency and flexibility. As is common with most participants in the industry in which it competes, Nokia has from time to time experienced difficulty in ramping up production at new facilities or effecting transitions to new manufacturing processes and, consequently, has suffered delays in product deliveries or reduced manufacturing efficiency. There can be no assurance that Nokia will not experience difficulties in achieving optimal levels of manufacturing efficiency and/or product delivery delays in the future as a result of, among other things, capacity constraints, construction delays, ramping up production at new facilities, upgrading or expanding existing facilities or changing its process technologies, any of which could adversely effect the Group's results of operations. The Group's results of operations could also be adversely affected by increases in fixed costs and operating expenses related to increases in production capacity if revenues do not increase commensurately.

Rapid Growth

Although Nokia has experienced rapid and significant growth in sales and operating profit over the last three years, the future rate of growth in sales and operating profit depends on a number of factors both within and outside of its control, including the economic stability of the countries in which Nokia operates as well as the other factors discussed herein. Accordingly, there can be no assurance that Nokia will be able to achieve sales or operating profit growth at a level comparable to the levels achieved during the past three years.

Share Price Volatility

Factors other than Nokia's results of operations, including, among other things, the level of business activity in the market for telecommunication services in general, the performance of high-technology companies, announcements by or the results of operations of Nokia's principal competitors and volatility in the financial markets generally may have an impact on the market price of the ADSs or the Shares. As a result, there can be no assurance that the price of the ADSs or the Shares will not experience substantial volatility. See "Item 5. Nature of Trading Market".

1.8 Employees

At December 31, 1998, Nokia employed 44,543 people. Of the total number of employees, 21,093 employees were based in Finland.

Less than 50% of Nokia's employees are unionized. Nokia management believes that it has good relations with its employees.

ITEM 2. DESCRIPTION OF PROPERTY

Nokia's principal executive offices are located at Keilalahdentie 4, Espoo, Finland.

Nokia maintains main manufacturing facilities in nine countries around the world. Nokia Telecommunications has ten main production facilities, located in China, Finland, the UK, and the U.S. Nokia Mobile Phones has eight main manufacturing facilities, located in Brazil, China, Finland, Germany, Mexico, South Korea and the U.S. The principal manufacturing facilities for Other Operations are located in Finland, Hungary and Mexico.

Consistent with the strong growth of its businesses, Nokia has made substantial investments in increasing its telecommunications related manufacturing capacity. Such investments have included the construction of new plants as well as the expansion of existing facilities. Although Nokia management believes that the production capacity of its manufacturing facilities is adequate and suitable for its current business needs, Nokia intends to continue to increase its manufacturing capacity consistent with the growth in demand for its products.

ITEM 3. LEGAL PROCEEDINGS

Nokia is party to routine litigation incidental to the normal conduct of its business. Nokia management does not believe that liabilities related to such proceedings, in the aggregate, are likely to be material to its financial condition or results of operations.

ITEM 4. CONTROL OF REGISTRANT

As far as is known to the Company, it is not directly or indirectly owned or controlled by another corporation or by any government, and there are no arrangements the operation of which may result in a change in its control.

No persons are known by the Company to hold more than 10% of the voting securities of the Company.

On March 19, 1999, the aggregate interest of the members of the Board of Directors and the Group Executive Board, as a group, in the Company's outstanding share capital was 56,640 A Shares and 9,280 K Shares, representing less than one percent of the issued share capital and voting rights in the Company. Members of the Group Executive Board also hold warrants exercisable for 1,380,000 A Shares (2,760,000 Shares after April 9, 1999) in the aggregate, representing less than one percent of the issued share capital and voting rights in the Company.

Annual General Meeting Resolutions

The Company's annual general meeting held on March 17, 1999 (the "Annual General Meeting") passed various resolutions to make certain changes (discussed below) to Nokia's share capital. All such changes are to occur simultaneously and take effect as of April 9, 1999.

Nokia's share capital is currently divided into two classes: A Shares and K Shares. Each A Share confers the right to one vote and each K Share confers the right to ten votes.

Stock Split. The Annual General Meeting passed a resolution to split, on a two-for-one basis, the A Shares and K Shares. As a result, the number of issued A Shares and K Shares will be doubled.

Consolidation. The Annual General Meeting also passed a resolution to consolidate the classes of A Shares and K Shares. Consequently, Nokia's share capital will comprise Shares. Each Share will confer the right to one vote.

Redenomination into euro. In addition, the Annual General Meeting passed a resolution to convert the nominal value of the Shares and the Company's share capital into euros and to increase (in order to round up) the nominal value of the Shares up to EUR 0.24 through a bonus issue.

Increase of share capital. Finally, the Annual General Meeting passed a resolution to authorize the Board of Directors to decide on an increase of the share capital up to a maximum of 120 million Shares in one or more issues. Shares to be issued may be used for financing of a business acquisition or other corresponding arrangement.

ITEM 5. NATURE OF TRADING MARKET

The principal trading markets for the A Shares are the New York Stock Exchange (in the form of ADSs) and the Helsinki Exchanges. In addition, the A Shares are listed on the London, Frankfurt, Stockholm and Paris Stock Exchanges. The K Shares are listed only on the Helsinki Exchanges. Nokia is in the process of amending its listing arrangements with the exchanges on which its A Shares are listed to change the current listings of A Shares to listings of Shares.

Currently, the New York Stock Exchange trading symbol for the ADSs is NOK.A. In connection with the consolidation of A Shares and K Shares, Nokia has made an application to the New York Stock Exchange to change its trading symbol to NOK (see Item 4 — Control of the Registrant). Nokia has requested that trading using the new trading symbol commence on April 12, 1999.

Trading in Nokia's A Shares in the form of ADSs evidenced by ADRs commenced on the New York Stock Exchange on July 1, 1994 in connection with the offering by Nokia of A Shares to U.S. and international investors.

The table below sets forth, for the periods indicated, the reported high and low quoted prices for the currently outstanding A Shares and K Shares on the Helsinki Exchanges and the high and low quoted prices for the A Shares (in the form of ADSs) on the New York Stock Exchange. In 1998 Nokia effected a two-for-one share split on April 16, 1998. Price per share and price per ADS figures for 1996 and 1997 have been adjusted accordingly.

	Helsinki Stock Exchange				New York Stock Exchange	
	Price Per K Share		Price Per A Share		Price Per ADS	
	High	Low	High	Low	High	Low
	(FIM)		(FIM)		(dollars)	
1996						
First Quarter	92.0	66.0	91.0	65.0	20.5	16.6
Second Quarter	102.5	74.5	102.5	75.0	21.8	15.9
Third Quarter	102.0	75.5	102.0	76.0	22.5	16.4
Fourth Quarter	133.5	100.0	134.0	100.5	29.2	22.0
1997						
First Quarter	166.0	129.5	166.3	130.5	33.6	28.3
Second Quarter	197.5	138.5	197.5	138.0	37.7	27.9
Third Quarter	250.5	190.0	251.5	189.5	46.9	36.4
Fourth Quarter	273.0	179.5	273.5	178.5	50.9	32.2
1998						
First Quarter	302.0	185.0	302.0	184.0	54.0	34.0
Second Quarter	404.0	303.5	403.5	306.0	74.9	55.3
Third Quarter	506.0	357.0	498.0	357.3	92.0	66.8
Fourth Quarter	638.0	236.0	637.8	301.0	124.8	62.8

American Depositary Share Program

In July 1994, the Company established a program for ADSs evidenced by ADRs issued by Citibank N.A., acting as the Depositary, upon deposit of A Shares or evidence of rights to receive A Shares with the Depositary.

According to information provided by the Depositary, as of December 31, 1998, there were 1,182 registered U.S. holders of 161,328,155 ADSs. In the aggregate, such holdings constituted 34% of the total outstanding A Shares of the Company at such date. As of December 31, 1998, there were 20 registered U.S. holders of A Shares, whose holdings constituted less than one percent of the total outstanding A Shares, and 23 registered U.S. holders of K Shares, whose holdings constituted less than one percent of the total outstanding K Shares at such date. Since certain of the K Shares, A Shares and ADSs are held by brokers and other nominees, the above numbers may not be representative of the actual number of U.S. beneficial holders or of the number of K Shares, A Shares or ADSs beneficially held by U.S. persons.

In connection with the transactions referred to in Item 4 — Control of the Registrant, Nokia's Deposit Agreement with Citibank will be amended to provide that one ADS will represent one Share.

A Dividend Reinvestment and Direct Purchase Plan (the "DRIP") for ADSs of Nokia was implemented in December 1997. The DRIP is designed to provide owners of ADSs and other interested investors who participate in the DRIP a convenient way to accumulate and increase their investments in ADSs and to reinvest all or a portion of their cash dividends or optional cash investments in additional ADSs. The DRIP is not available to persons located outside the United States. The DRIP is sponsored and administered by the Depositary. The Company has consented to the establishment of the DRIP by the Depositary, but does not, and should not be deemed to, sponsor or administer the DRIP. The Company assumes no obligation or liability for the operation of the DRIP.

Convertibility

Pursuant to Nokia's Articles of Association, holders of K Shares have the right to convert such K Shares, or a portion thereof, into an equivalent number of A Shares within the limits set for the minimum and maximum number of shares in each class. After the consolidation of A Shares and K Shares, all Shares will confer equal rights without any right of conversion.

Share Split

At the Annual General Meeting, the Company's shareholders approved a two-for-one stock split of the A Shares and K Shares. Effective April 9, 1999, each A Share and K Share, will be split into two. The ratio of ADSs to Shares will continue to be one to one.

ITEM 6. EXCHANGE CONTROLS AND OTHER LIMITATIONS AFFECTING SECURITY HOLDERS

There are currently no Finnish foreign exchange control restrictions on the payment of dividends on the shares or the conduct of Nokia's operations.

Voting Rights

Each A Share confers the right to one vote and each K Share confers the right to ten votes. As a result of the consolidation of the A Shares and K Shares each Share will confer the right to one vote.

Under Finnish law shareholders may attend and vote at a general meeting in person or by proxy. It is not customary in Finland for a company to issue forms of proxy to its shareholders. Correspondingly, the Company does not issue them to each shareholder. Shareholders wishing to vote by proxy may submit their own forms of proxy to the Company in favor of a person of their choice.

To attend and vote at a general meeting, a shareholder must be registered in the register of shareholders, on the Book-Entry Securities System, no later than five days prior to the general meeting. Voting rights may not be exercised by a shareholder if his shares are registered in the name of a nominee (including the depositary of the ADRs), thus a beneficial owner whose shares are registered in the name of a nominee (including the depositary of the ADRs) is not entitled to vote such shares unless the beneficial owner first arranges to have its name entered in the register of shareholders.

A further prerequisite for attending and voting at a general meeting is that the shareholder has given notice to the Company of his intention to attend no later than the date and time specified by the Board of Directors in the notice of the meeting, which day and time may not be earlier than five days before such a meeting.

Purchase Obligation

The Company's Articles of Association require a shareholder who has acquired 33⅓% or 50% of all the shares or of all the votes of the Company is obliged to purchase the shares of all other shareholders who request such purchase at a price generally based on the historical weighted average trading price of such shares. The Annual General Meeting passed a resolution to amend the Articles of Association, according to which a shareholder's obligation to purchase arises upon holding of 33⅓% or 50% of all the Shares, only. Such shareholder is also obligated to purchase any subscription rights, warrants or convertible bonds issued by the Company if so requested by the holder thereof.

Under the Securities Market Act, a shareholder whose holding exceeds two-thirds of the total voting rights in the Company, shall within one month offer to purchase the remaining shares of the Company as well as any subscription rights, warrants, 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, inter alia, on the basis of the average of the prices paid for the security in public trading within the preceding twelve months, any higher price paid by the shareholder as well as any other special circumstances.

Under the Companies Act, a shareholder whose holding exceeds nine-tenths of the total number of shares or voting rights in the Company has both the right and the obligation to purchase all the shares of the minority shareholders for a current price. The current price is determined, inter alia, on the basis of the recent market price of the share. The purchase procedure under the Companies Act differs, and the purchase price may differ, from the purchase procedure and price under the Securities Market Act as discussed above.

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.

Under the Act on the Control of Foreigners' Acquisition of Finnish Companies of 1992, clearance by the Ministry of Trade and Industry is required for a non-resident of Finland, directly or indirectly, to acquire one-third or more of the voting power of the Company. The Ministry of Trade and Industry may refuse such clearance where the acquisition would jeopardize important national interests, in which case the matter is referred to the Council of State. These clearance requirements are not applicable if the voting power is acquired in an issuance of Shares in proportion to the holding of the Shares. Moreover, the clearance requirements do not apply to residents of countries forming the European Economic Area or countries that have ratified the Convention on the Organisation for Economic Cooperation and Development.

ITEM 7. TAXATION

General

The taxation discussion set forth below is intended only as a descriptive summary and does not purport to be a complete analysis or listing of all potential tax effects relevant to ownership of the Company's A Shares represented by ADRs (evidencing ADSs).

In this Item 7 only, all references to A Shares include Shares after April 9, 1999.

The statements of United States and Finnish tax laws set out below are based on the laws in force as of the date of this Form 20-F and may be subject to any changes in United States or Finnish law, and in any double taxation convention or treaty between the United States and Finland, occurring after that date.

For purposes of the summary, beneficial owners of ADRs who are considered residents of the United States for purposes of the current income tax convention between the United States and Finland (the "Treaty"), and are not subject to an anti-treaty shopping provision that applies in limited circumstances, are referred to as "United States Holders". Beneficial owners that are citizens or residents of the United States, corporations organized under U.S. law, and U.S. partnerships, estates or trusts (to the extent their income is subject to U.S. tax either directly or in the hands of partners or beneficiaries) generally will be considered to be residents of the United States under the Treaty. Special rules apply to United States 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 the Custodian will perform all actions as required by the Deposit Agreement and other related agreements between the Depositary and the Company.

Because this summary is not exhaustive of all possible tax considerations (such as situations involving persons who are dealers or whose functional currency is not the U.S. dollar), holders of A Shares who are United States Holders are advised to satisfy themselves as to the overall United States federal, state and local tax consequences, as well as to the overall Finnish tax consequences, of their ownership of ADRs and the underlying A Shares by consulting their own tax advisors. Holders of ADRs are also urged to consult their own tax advisors as to the overall tax consequences of their ownership of ADRs and the underlying A Shares. This summary does not discuss the treatment of ADRs that are held in connection with a permanent establishment or fixed base in Finland.

For the purposes of both the Treaty and the United States Internal Revenue Code of 1986, as amended (the "Code"), United States Holders of ADRs will be treated as the owners of the underlying A Shares that are represented by such ADRs. The United States federal income tax consequences to United States Holders of ADRs, as discussed below, apply as well to United States Holders of A Shares.

The holders of ADRs will, for Finnish tax purposes, be treated as the owners of the A Shares that are represented by such ADRs. The Finnish tax consequences to the holders of A Shares, as discussed below, also apply to the holders of ADRs.

Taxation of Cash Dividends

For United States federal income tax purposes, the gross amount of dividends paid (including any Finnish withholding tax thereon) to United States Holders of ADRs will be treated as gross income to such holders at the time it is received. Such dividends will not be eligible for the dividends received deduction allowed to corporations under Section 243 of the Code. The amount includable in income will be the U.S. dollar value of the payment (determined at the time such payment is received by the Custodian) 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 ordinary income or loss to such holder.

Under Finnish Act on Taxation of Non-residents' Income and Wealth, non-residents of Finland are generally subject to a withholding tax on dividends paid by the Company at a rate of 28%. However, pursuant to the Treaty, dividends paid by the Company to United States Holders will generally be subject to Finnish withholding tax at a reduced rate of 15% of the gross amount of such dividend.

Subject to certain conditions and limitations, such Finnish withholding taxes will be treated as foreign taxes eligible for credit against such United States Holder's United States federal income tax liability. Dividends received with respect to the ADRs will constitute foreign source passive income for foreign tax credit purposes, but in some circumstances may constitute financial services income or general limitation basket income. In lieu of a credit, a United States Holder of ADRs may elect to deduct all of such United States Holder's foreign taxes.

Further, in accordance with the imputation system of taxation of dividends, the Finnish corporate income tax paid by the Company can, in the case of a shareholder who is a resident of Finland and therefore liable for Finnish income tax, be credited against the Finnish income tax of the shareholder to the extent it relates to the dividends distributed to the shareholder. However, the tax paid by the Company cannot be credited against the Finnish income taxes, if any, of the United States Holders.

Tax on Sale or Exchange

A United States Holder will recognize taxable gain or loss on any sale or exchange of ADRs. If the ADRs are held as a capital asset, such gain or loss will be long-term capital gain or loss if, at the time of the sale or exchange, the ADRs have been held for more than one year. Any such gain, for foreign tax credit purposes, will generally constitute United States source income. United States Holders should consult their tax advisors regarding the source of loss recognized on the sale or other disposition of ADRs. In the case of a United States Holder who is an individual, any capital gain generally will be subject to U.S. federal income tax at preferential rates if specified minimum holding periods are met.

The sale by a United States Holder (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) of the ADRs or the underlying A Shares will generally, in accordance with Finnish tax law and the Treaty, not be subject to income tax in Finland.

Finnish Capital Taxes

Under the Treaty, the holding of ADRs or the underlying A Shares by United States Holders will generally not subject such United States Holders to the Finnish tax on net capital.

Finnish Transfer Tax

Transfers of A Shares will be, and transfers of ADRs may 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 credit institution. In case the Finnish Transfer Tax Act is applicable, transfer tax would, however, not be payable to the case of stock exchange transfers. Otherwise the transfer tax would be payable at the rate of 1.6% of the transfer value of the security traded.

Finnish Inheritance and Gift Taxes

A transfer of an underlying A Share by gift or by reason of the death of a United States holder and the transfer of an ADR are not subject to Finnish gift or inheritance tax provided that neither the deceased person or the donator nor the beneficiary of the deceased person or the recipient of the gift are resident in Finland.

Nonresidents of the United States

Beneficial owners of ADRs who are not United States Holders will not be subject to United States federal income tax on dividends received with respect to ADRs unless such income is effectively connected with the conduct of a trade or business within the United States. Such persons will generally not be subject to United States federal income tax on gain realized on the sale or disposition of ADRs, unless (i) such gain is effectively connected with the conduct of a trade or business in the United States or (ii), in the case of an individual, such individual is present in the United States for 183 days or more in the taxable year of the disposition and certain other conditions are met.

Backup Withholding and Information Reporting

The 31% "backup" withholding and information reporting requirements apply to certain payments of dividends with respect to ADRs and to proceeds from the sale of ADRs. Backup withholding will apply only if the holder fails to furnish its taxpayer identification number (social security number or employer identification number), to certify that such holder is not subject to backup withholding, or to otherwise comply with the applicable requirements of the backup withholding rules. Any amount withheld under these backup withholding rules will be creditable against the holder's federal income tax liability.

Certain holders (including, among others, corporations) are not subject to the backup withholding and information reporting requirements. Backup withholding and information reporting will generally not apply to dividends paid to a holder who is not a United States Holder at an address outside the United States (provided that the Company or the Depositary does not have actual knowledge that the payee is a United States person).

The payments of the proceeds from the disposition of ADRs to or through the foreign office of a foreign broker will not be subject to backup withholding and will generally not be subject to information reporting. The payment of the proceeds from such a disposition to or through the United States office of a broker or a foreign office of a United States broker will be subject to backup withholding and information reporting unless the owner certifies, among other things, its status as a holder who is not a United States Holder, or otherwise establishes an exemption. Information reporting will apply, however, to dispositions through a foreign office of a foreign broker that is either a "controlled foreign corporation" for United States federal income tax purposes or a person 50% or more of whose gross income from all sources for a certain three-year period was effectively connected with a United States trade or business, unless the broker had documentary evidence in its files that the owner is a holder that is not a United States Holder, or otherwise establishes an exemption.

Finalized Treasury regulations have generally expanded the circumstances under which information reporting and backup withholding may apply for payments made after December 31, 1999. Holders of A Shares and ADRs should consult their tax advisors regarding the application of the backup withholding and information reporting rules.

ITEM 8. SELECTED FINANCIAL DATA

The financial data set forth below at December 31, 1997 and 1998 and for each of the years in the three year period ended December 31, 1998 have been derived from the consolidated financial statements of Nokia included in Item 18 herein. Financial data at December 31, 1994, 1995 and 1996 and for each of the years in the two year period ended December 31, 1995 have been derived from Nokia's published financial statements not included herein.

The financial data at December 31, 1997 and 1998 and for each year of the three year period ended December 31, 1998 should be read in conjunction with, and are qualified in their entirety by reference to, the consolidated financial statements and the notes thereto included in Item 18 herein.

The audited consolidated financial statements from which the selected consolidated financial data set forth below have been derived were prepared in accordance with IAS, which differ in certain respects from U.S. GAAP. For a discussion of the principal differences between IAS and U.S. GAAP, see "Item 9 — Management's Discussion and Analysis of Financial Condition and Results of Operations — Principal Differences between IAS and U.S. GAAP" and Note 35 to the consolidated financial statements.

The financial data set forth below has been converted into euros at the rate of 5.94573 Finnish Markka per euro, the conversion ratio announced on December 31, 1998.

	Year ended December 31,					
	1994	*1995*	*1996*	*1997*	*1998*	*1998*
	(FIM)	*(FIM)*	*(FIM)*	*(FIM)*	*(FIM)*	*(EUR)*
	(in millions, except per share data)					
Profit and Loss Account Data						
Amounts in accordance with IAS						
Net Sales	30,177	36,810	39,321	52,612	79,231	13,326
Operating Profit	3,596	5,012	4,266	8,454	14,799	2,489
Profit before Tax and Minority Interests	4,002	4,933	3,898	8,371	14,603	2,456
Profit from Continuing Operations	N/A	4,087	3,044	5,998	9,992	1,680
Profit before Extraordinary Items	2,995	N/A	N/A	N/A	N/A	N/A
Discontinued Operations	—	(2,340)	219	261	—	—
Cumulative Prior Year Effect of Change in Accounting Policies	—	485	—	—	416	70
Extraordinary Items, Net [(1)]	944	—	—	—	—	
Net Profit	3,939	2,232	3,263	6,259	10,408	1,750
Earnings per share from continuing operations, basic [(3)]	5.49[(2)]	7.18	5.37	10.59	17.56	2.95
Cash Dividends per share	1.25	1.50	1.75	3.75	5.75	0.97
Amounts in accordance with U.S. GAAP						
Income from Continuing Operations	3,228	3,884	2,954	6,135	10,461	1,759
Income (Loss) from Discontinued Operations	1,432	(1,721)	348	261	—	—
Net Income	4,660	2,163	3,302	6,396	10,461	1,759
Basic Earnings per share	8.54	3.80	5.82	11.29	18.38	3.09
Diluted Earnings per share	8.03	3.79	5.80	11.09	17.83	3.00

	At December 31,					
	1994	*1995*	*1996*	*1997*	*1998*	*1998*
	(FIM)	*(FIM)*	*(FIM)*	*(FIM)* *(in millions)*	*(FIM)*	*(EUR)*
Balance Sheet Data						
Amounts in accordance with IAS						
Fixed Assets and Other Non-Current Assets	7,943	9,047	8,409	9,445	13,200	2,220
Cash and Cash Equivalents	5,268	4,214	7,545	12,247	17,188	2,891
Other Current Assets	14,638	19,500	17,321	20,046	29,272	4,923
Total Assets	27,849	32,761	33,275	41,738	59,660	10,034
Shareholders' Equity	12,418	13,806	15,925	21,524	30,379	5,109
Minority Interests	555	422	29	195	376	63
Long-Term Debt	3,071	2,121	2,117	1,348	1,530	257
Other Long-Term Liabilities	486	457	297	295	899	152
Borrowings Due Within One Year	2,731	4,519	3,959	3,293	4,518	760
Other Current Liabilities	8,588	11,436	10,948	15,083	21,958	3,693
Total Liabilities and Shareholders' Equity	27,849	32,761	33,275	41,738	59,660	10,034
Net Interest-Bearing Debt (4)	534	2,426	(1,469)	(7,606)	(11,140)	(1,874)
Amounts in accordance with U.S. GAAP						
Total Assets	28,447	33,303	33,899	42,319	59,634	10,030
Shareholders' Equity	12,227	13,573	15,840	21,602	30,338	5,102

(1) Primarily includes costs related to the restructuring and the sale of shareholdings in non-core businesses.

(2) Computed by dividing profit before extraordinary items by the weighted average number of K Shares and A Shares outstanding.

(3) Adjusted for share splits.

(4) Short-term and long-term debt less cash and cash equivalents.

Dividends

Dividends, if any, are paid by the Company in accordance with the Finnish Companies Act. The amount of dividends is based upon and calculated in relation to the level of Nokia's annual profit; however, there is no formula by which the amount of dividends is determined. The timing and amount of future dividend payments, if any, will depend on Nokia's future earnings and financial condition as well as the Company's and Nokia's retained earnings.

Under the Finnish Companies Act, dividends on the shares of the Company, as a Finnish company may, subject to certain exceptions, be paid annually only after shareholder approval of the Company's results and of the amount of the dividend proposed by its board of directors. The amount of any dividend is limited, inter alia, by reference to retained earnings of the Company and the consolidated retained earnings of Nokia, whichever is lower, available at the end of the preceding financial year. Subject to certain exceptions relating to the right of minority shareholders to request otherwise, the dividend may not exceed the amount proposed by the board of directors.

Holders of A Shares are entitled to receive, out of available profits, a fixed annual dividend amounting to 10% of the par value of such shares held before a dividend is distributed to holders of K Shares. Should the fixed annual dividend not be paid in full in any year, the holders of A Shares are entitled (in priority to any payment to the holders of K Shares) to receive any accruals and arrears of such fixed annual dividend out of the profits available for distribution in the next year in which a dividend is paid. Should a dividend higher than 10% of the par value of the shares held be paid on the K Shares, holders of A Shares are entitled to a supplementary dividend so that the dividend for both classes of shares shall be the same. Upon consolidation of the A Shares and K Shares, effective on April 9, 1999, all Shares will be entitled to the same dividend rights as the current A Shares.

The table below sets forth the amounts of total dividends on each A Share in respect of each fiscal year indicated. For the purposes of showing the dollar amounts per ADS, such amounts have been translated into U.S. dollars per ADS at the Noon Buying Rate on the respective Finnish payment date.

	Markka per A Share	*Dollars per ADS*
1994	1.25	0.27
1995	1.50	0.35
1996	1.75	0.34
1997	3.75	0.67
1998	5.75	—

In 1998, Nokia effected a two-for-one share split effective on April 16. Dividend per share and dividend per ADS figures for previous periods have been adjusted accordingly.

Cash dividend payments by Nokia are made in markka and exchange rate fluctuations will affect the U.S. dollar amount received by holders of ADRs on conversion of such dividends. Moreover, fluctuations in the exchange rates between markka and the U.S. dollar will affect the dollar equivalent of the markka price of the A Shares (Shares from April 9, 1999) on the Helsinki Exchanges and, as a result, are likely to affect the market price of the ADSs which are represented by ADRs in the United States.

ITEM 9. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following management's discussion and analysis should be read in conjunction with the Consolidated Financial Statements included in Item 18. herein. The Consolidated Financial Statements, and the financial information discussed below, have been prepared in accordance with IAS. For a discussion of the principal differences between IAS and U.S. GAAP, see "— Principal Differences between IAS and U.S. GAAP" and Note 35 to the Consolidated Financial Statements.

Business segment data in the following management's discussion and analysis is prior to inter-segment eliminations. See Note 2 to the Consolidated Financial Statements.

Introduction

In 1993, Nokia adopted the strategic objective of establishing the Group as a leading international supplier of telecommunications systems and equipment in the rapidly evolving global telecommunications industry. Nokia's results over the last six years reflect the rapid growth of its core businesses, together with the implementation of Nokia's strategy of streamlining its structure to a broad-scope telecommunications company. During the period from December 31, 1996 to December 31, 1998, sales of Nokia Telecommunications and Nokia Mobile Phones increased by 96% and 122%, respectively, as a result of strong demand for Nokia's solutions and products. Nokia has invested heavily in research and development, the introduction of new products and creating increased consumer recognition of the Nokia brand name. In addition, Nokia has expanded substantially the global reach of its operations by establishing manufacturing facilities, distribution centers and sales and support services in a number of its markets. Nokia currently has manufacturing facilities in 11 countries, personnel in some 45 countries and supplied its products in over 130 countries worldwide. In 1998, 56% of Nokia's net sales originated from Europe, 21% from the Asia-Pacific, 21% from the Americas and 2% from other countries. Based on sales, the ten largest markets were the U.S., China, the U.K., Germany, France, Italy, Finland, Austria, Sweden and Australia, representing 68% of total sales in the aggregate.

The following table sets forth the net sales and operating profit for Nokia's business groups for the periods indicated.

	Year ended December 31,					
	1996		1997		1998	
	Net Sales	Operating Profit	Net Sales	Operating Profit	Net Sales	Operating Profit
Nokia Telecommunications	13,333	2,982	18,826	4,053	26,103	5,706
Nokia Mobile Phones	21,579	1,431	27,643	3,837	47,984	9,158
Other Operations	5,197 (1)	(147)	7,239	564	6,029	(65)
Eliminations	(788)	—	(1,096)	—	(885)	—
Total	39,321	4,266	52,612	8,454	79,231	14,799

(1) Discontinued and Divested Operations accounted for FIM 589 million in 1996.

The following table sets forth the regional distribution of Nokia's net sales from 1996 to 1998.

Percentage of Net Sales by Region

	1996	1997	1998
Finland	6%	5%	4%
Other European Countries	53%	51%	52%
Americas	16%	18%	21%
Asia-Pacific	22%	23%	21%
Other Countries	3%	3%	2%
Total	100%	100%	100%

During the past three years, Nokia has made substantial expenditures in product development, additional manufacturing capacity and research and development. In 1998, capital expenditures totaled FIM 4,527 million, an increase of 88% compared to 1997. Principal investments during the year included continued expansion of infrastructure system and equipment manufacturing and terminal manufacturing capabilities. Research and development costs, which consist primarily of costs related to the development of telecommunications equipment software and hardware, totaled FIM 6,838 in 1998, an increase of 50% from 1997.

During the past three years, Nokia has increased substantially its total number of employees as a result of the rapid growth of its telecommunications businesses. Since the beginning of 1996, Nokia Telecommunications and Nokia Mobile Phones have increased their workforce by 9,341 and 6,806 persons, respectively. The majority of these new employees are in research and development and production activities.

Results of Operations for the Three Years Ended December 31, 1998

Nokia Results — Nokia net sales totaled FIM 79.2 billion in 1998, FIM 52.6 billion in 1997 and FIM 39.3 billion in 1996, representing an increase in net sales of 51% in 1998 and 34% in 1997. Sales increased in Nokia Telecommunications by 39% in 1998 and by 41% in 1997, in Nokia Mobile Phones by 74% in 1998 and by 28% in 1997. In Other Operations sales decreased by 17% in 1998 and increased by 39% in 1997. See Note 10 to the Consolidated Financial Statements.

Nokia's operating profit increased to FIM 14,799 million in 1998 compared to FIM 8,454 million in 1997 and FIM 4,266 million in 1996. Nokia's operating margin was 18.7% in 1998 compared to 16.1% in 1997 and 10.8% in 1996. Nokia Telecommunications reported an operating profit of FIM 5,706 million, FIM 4,053 million and FIM 2,982 million in 1998, 1997 and 1996, respectively. Operating profit for Nokia Mobile Phones was FIM 9,158 million, FIM 3,837 million and FIM 1,431 in 1998, 1997 and 1996, respectively. Other

Operations reported an operating loss of FIM 65 million in 1998 compared to an operating profit of FIM 564 million in 1997 and an operating loss of FIM 147 million in 1996.

Nokia's net financial expenses totaled FIM 234 million, FIM 137 million and FIM 405 million in 1998, 1997 and 1996, respectively. The increase in net financial expenses from 1997 to 1998 resulted primarily from higher hedging expenses due to certain currency movements. See "— Exchange Rates". The decrease from 1996 to 1997 resulted primarily from higher interest income earned on improved cash flow from operations in 1997. See Note 8 to the Consolidated Financial Statements.

Profit before taxes and minority interests totaled FIM 14,603 million in 1998 compared to FIM 8,371 million in 1997 and FIM 3,898 million in 1996. Taxes were FIM 4,380 million, FIM 2,274 million and FIM 856 million in 1998, 1997 and 1996, respectively. Minority shareholders' interest in Group companies' profits totaled FIM 231 million in 1998 and FIM 99 million in 1997. In 1996, minority shareholders' interest in Group companies' losses was FIM 2 million.

Profit from continuing operations was FIM 9,992 million, FIM 5,998 million and FIM 3,044 million in 1998, 1997 and 1996, respectively. Basic earnings per share from continuing operations (split-adjusted) increased to FIM 17.56 in 1998 compared to FIM 10.59 in 1997 and FIM 5.37 in 1996.

1998 includes the cumulative positive effect from a change in accounting policy related to deferred taxes of FIM 416 million. In 1997 the positive impact from the release of the provision made for the withdrawal from the television business was FIM 261 million. The provision recorded in 1995 was FIM 2,340 million. In 1996, Nokia recognized a gain from discontinued operations of FIM 219 million (net of tax), which included a gain of FIM 242 million from the disposal of its 50% interest in Finnish Chemicals and a loss of FIM 23 million on the disposition of its cable business.

Net profit in 1998 increased to FIM 10,408 million compared to FIM 6,259 million in 1997 and FIM 3,263 million in 1996, representing year on year increases in net profit of 66% in 1998 and 92% in 1997.

Nokia Telecommunications — Net sales of Nokia Telecommunications were FIM 26,103 million in 1998 compared to FIM 18,826 million in 1997 and FIM 13,333 million in 1996. Sales growth was especially strong in Europe and China in both 1998 and 1997. The business group's order inflow was FIM 30 billion in 1998, FIM 23 billion in 1997 and FIM 14.5 billion in 1996, representing a year on year increase of 30% in 1998 and 58% in 1997.

Costs and expenses in the business group increased in 1998 and 1997 in line with growth in sales. In 1998, 1997 and 1996 costs and expenses were 78% of net sales. In 1997, costs and expenses included goodwill amortization of FIM 321 million related to the acquisition of Ipsilon. See "— Liquidity and Capital Resources" and Note 6 to the Consolidated Financial Statements. Research and development expenses were FIM 3,353 million in 1998 (12.8% of net sales), FIM 2,556 million in 1997 (13.6% of net sales) and FIM 1,926 million in 1996 (14.4% of net sales).

Operating profit increased to FIM 5,706 million compared to FIM 4,053 million in 1997 and FIM 2,982 million in 1996. Operating profit margin was 21.9% in 1998 compared to 21.5% in 1997 and 22.4% in 1996.

Nokia Mobile Phones — Net sales of Nokia Mobile Phones totaled FIM 47,984 million in 1998 compared to FIM 27,643 million in 1997 and FIM 21,579 million in 1996. The increase in net sales in 1998 and 1997 was primarily attributable to growth in sales volumes. Sales growth slowed in the second half of 1997 due to lack of a competitive product in Japan and the preparation for product transitions from the lower priced Nokia 1600 and 3100 series to the new 6100 and 5100 series.

Costs and expenses increased in 1998 to FIM 38,826 million from FIM 23,806 million in 1997 and FIM 20,148 million in 1996. Increased sales volume and, with respect to 1996, higher inventory costs and logistical difficulties, contributed to the increase. As a percentage of net sales, costs and expenses decreased to 81% in 1998 compared to 86% in 1997 and 93% in 1996, reflecting increased volumes and in 1998 price erosion of Nokia mobile phones well below historic levels. Research and development expenses totaled FIM 3,103 million, 6.5% of net sales in 1998 compared to FIM 1,714 million, 6.2% of net sales in 1997 and FIM 1,376 million, 6.4% of net sales in 1996.

Operating profit improved significantly from 1997 to 1998, increasing 139% to FIM 9,158 million in 1998. Operating profit also increased significantly in 1997 to FIM 3,837 million from FIM 1,431 million in 1996. The strong increase in profitability in 1998 and 1997 was due to further improvements in logistics processes, renewal of the product range and continuous cost improvements. Operating profit in 1996 was affected by declining price levels and logistical problems during the first half of 1996. Operating profit margin in 1998 was 19.1% compared to 13.9% in 1997 and 6.6% in 1996.

Other Operations — Nokia Communications Products, Nokia Ventures Organization, Nokia Research Center as well as general Group expenses are reported under Other Operations for 1998. See "Description of Business — General". Net sales from Other Operations totaled FIM 6,029 million in 1998 compared to FIM 7,239 million in 1997 and FIM 5,197 million in 1996. Sales in Nokia Industrial Electronics in 1998 were 10% lower than the prior year excluding the impact of businesses divested in 1998 (LK-Products, a manufacturer of telecommunications components, and a car electronics business). Price erosion related to monitors of 30-50% contributed to the decline in net sales. In 1997, sales increased in the Nokia Multimedia Terminals business as a result of the commencement of volume shipments of multimedia terminals. Sales also increased in the Nokia Industrial Electronics division in 1997 as a result of the introduction of new monitors and increased sales of mobile phone chargers and antennas.

Other Operations reported an operating loss of FIM 65 million in 1998 compared to an operating profit of FIM 564 million in 1997 and an operating loss of FIM 147 million in 1996. The 1998 operating loss includes a gain of FIM 177 million from the disposal of LK-Products. In 1997 Nokia sold its audio electronics business and recognized a gain of FIM 129 million.

Exchange Rates

Nokia's business and results of operations are from time to time affected by changes in exchange rates, particularly between the Finnish markka and other currencies such as the U.S. dollar, the Japanese yen and the UK pound. Foreign currency denominated assets and liabilities together with firm and probable purchase and sale commitments give rise to foreign exchange exposure. In 1998, approximately 3% of Nokia's net sales were made in Finnish markka, while a significantly higher percentage of Nokia's total manufacturing and operating expenses, consisting primarily of its research and development and personnel expenses, were incurred in Finnish markka. In general, appreciation of the Finnish markka relative to another currency has an adverse effect on Nokia's revenues and operating profit, while depreciation of the Finnish markka has a positive effect.

In 1998, the Finnish markka appreciated approximately 0.9% against the European Currency Unit ("ECU"). See "Economic Monetary Union and the euro" for a discussion of the effect of the use of the euro on foreign exchange risk to Nokia. The Finnish markka appreciated approximately 6.6% against the U.S. dollar and approximately 6.0% against the UK pound having a slightly negative impact on the Group results of operations. In 1997 and 1996, the Finnish markka depreciated approximately 3.8% and 3.1%, respectively against the ECU and approximately 16.7% and 6.5%, respectively against the U.S. dollar and approximately 13.8% and 16.6% respectively against the UK pound, having a slightly positive impact on the Group's results of operations during each year.

In 1998 and 1997, the Finnish markka depreciated approximately 7.9% and 3.6%, respectively against the Japanese yen, having a slightly negative affect on the Group's result of operations. In 1996, the markka appreciated approximately 4.5% against the Japanese yen, having a slightly positive affect on the Group's results of operations. In addition to the impact of exchange rate fluctuations on Nokia's operating results discussed above, Nokia's balance sheet is also affected by the conversion into markka for financial reporting purposes of the shareholders' equity of the Company's foreign subsidiaries that are denominated in currencies other than the markka. In general, this conversion increases the Company's shareholders' equity when the markka depreciates, and affects shareholders' equity adversely when the markka appreciates against the relevant other currencies.

Nokia's policy is to closely monitor and hedge its exchange rate exposure. For a discussion of the instruments used by Nokia in connection with its hedging activities, see Note 32 to the Consolidated Financial Statements. See also "Item 9A. Quantitative and Qualitative Disclosure About Market Risk" and "Item 1. Description of Business — 1.7 Business Risk Factors — Currency Exchange Rate Fluctuations".

Inflation

The rates of inflation in Finland in 1998, 1997 and 1996 were 1.4%, 1.2% and 0.6%, respectively. The effects of inflation on Nokia's operations have not been significant in recent years.

Research and Development

Success in the telecommunications industry requires continuous introduction of new products and applications based on the latest available technology. This places considerable demands on Nokia's research and development activities. Consequently, in order to maintain its competitiveness, Nokia has made substantial research and development expenditures in each of the last three years. Total research and development expenses for 1998 were FIM 6,838 million representing 8.6% of net sales, an increase of 50% over 1997. The majority of such expenditures have been in Nokia Telecommunications and Nokia Mobile Phones, where research and development expenses as a percentage of net sales were 13% in 1998 and 14% in both 1997 and 1996 in the case of Nokia Telecommunications, and 6% in the case of Nokia Mobile Phones, in 1998, 1997 and 1996.

Liquidity and Capital Resources

At December 31, 1998, Nokia's cash and cash equivalents increased to FIM 17,188 million compared to FIM 12,247 million on December 31, 1997, primarily as a result of increased cash generated from operations. Cash and cash equivalents totaled FIM 7,545 million on December 31, 1996. Net cash from operating activities was FIM 10,029 million in 1998 compared to FIM 10,201 million in 1997 and FIM 8,319 million in 1996. Nokia continued to improve management of working capital in both 1998 and 1997.

Net cash used in investing activities in 1998 was FIM 4,638 million compared to FIM 2,972 million in 1997 and FIM 3,074 million in 1996. Cash flow from investing activities in 1998 included FIM 1,684 million proceeds from the sale of shares in Group companies, other shares and fixed assets. In 1998 Nokia acquired Vienna Systems Corporation for FIM 429 million in cash. Nokia acquired Ipsilon in 1997 for FIM 485 million in cash and FIM 85 million in the Company's A Shares. Capital expenditures for 1998 were FIM 4,527 million compared to FIM 2,402 million in 1997 and FIM 2,028 million in 1996. Major items of capital expenditure included continued expansion of Nokia's manufacturing capabilities as well as research and development equipment.

Net cash used in financing activities decreased to FIM 372 million in 1998 compared to FIM 2,641 million in 1997 primarily as a result of increase in short-term borrowings. Net cash from financing activities was FIM 1,939 million in 1996.

At December 31, 1998, Nokia had FIM 1,530 million in long-term interest-bearing liabilities and FIM 4,518 million in short-term borrowings, offset by FIM 17,188 million in cash and bank deposits and short-term investments, resulting in a net cash balance of FIM 11,140 million. Nokia's net interest-bearing debt (short-term and long-term debt less cash and cash equivalents) to equity (shareholders' equity and minority interests) ratio was −36%, −35%, and −9% at December 31, 1998, 1997 and 1996, respectively. The improvement in 1998 was primarily a result of the Group's improved cash position at year end.

The Company is required to pay out of available profits a cumulative dividend of 10% of the par value of the A Shares prior to any dividend being paid on the K Shares. The total dividends on A Shares were FIM 1.75, FIM 3.75 and FIM 5.75 for the years ended December 31, 1996, 1997 and 1998, respectively. This requirement will apply to all Shares on consolidation of the A Shares and K Shares effective April 9, 1999. See Item 4 — Control of the Registrant

Nokia has no potentially significant refinancing requirements in 1999. Nokia expects to incur additional indebtedness from time to time as required to finance working capital needs. Nokia has a $500 million U.S. commercial paper program and a $500 million Euro commercial paper program. The Group also has committed credit facilities totaling $900 million and a number of short term uncommitted facilities.

Nokia has historically maintained a high level of liquid assets, and management estimates that the cash level of FIM 17,188 million at the end of 1998 together with its available credit facilities, is sufficient for current operating purposes.

Economic and Monetary Union and the euro

In January 1999, 11 European Union member states, Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain formed Economic and Monetary Union (EMU). The 11 EMU member states also introduced a new common currency, the euro. The fixed, irrevocable conversion rates between the euro and national EMU currencies were announced on December 31, 1998.

In 1998, over half of the Company's net sales originated from Europe and the 11 EMU member states accounted for one-third of this total. The majority of Nokia's production, research and development and total personnel was based in Europe. The euro market, formed by the eleven EMU member states, is one of the largest markets in the world, which Nokia believes is leading to a more stable and favorable operating environment.

The use of the euro decreases the foreign exchange risk to be managed at Nokia, as well as the cost of cash management due to lower transaction costs. It opens opportunities for more efficient liquidity management and eases the management of liquid funds and interest rate risks.

Nokia supports the wide use of the euro during the transition period, which started on January 1, 1999 and will conclude on December 31, 2001. The Company implemented use of the euro in its internal operations from the beginning of the transition period. Nokia will also use the euro to report its results for periods beginning on or after January 1, 1999. In business transactions with its customers, suppliers and sub-contractors operating in the EMU member states, Nokia prefers the euro as a trading currency. However, Nokia respects the "no compulsion — no prohibition" principle in the use of the euro and the use of the euro is always mutually agreed upon with the business partner. In non-EMU countries Nokia is prepared to consider using the euro in business transactions if the customer so prefers.

Nokia began preparing for the euro in 1996 and has been able to integrate many euro-related changes in its normal process development and system upgrading projects. As a result, direct euro changeover costs have not been significant. The Company believes that euro related cost savings will offset the euro changeover costs in the short-term.

Year 2000 Compliance Program

The "Year 2000 issue" relates to the way computer programs and systems use a two-digit year presentation in order to conserve computer memory. The Year 2000 issue may materialize if computers or other information systems fail to recognize that the year 1999 is followed by the year 2000, that the year 2000 is a leap year, or that the figures 99 or 00 do not mean the end of the file. In the event of such a failure, a malfunction might occur in products/processes using a microprocessor with a two-digit year presentation.

The Nokia Year 2000 Project

Nokia has established processes to evaluate and manage the possible risks and costs associated with the Year 2000 issue. These processes are a part of the Nokia Year 2000 Project, which has overall responsibility for the Year 2000 issue within Nokia. The Project includes identifying the potential risk areas, increasing risk awareness, and introducing action plans and guidelines for managing the Year 2000 issue. To Nokia, Year 2000 compliance means that neither performance nor functionality is affected by the date, prior to, during or after the year 2000, as more specifically defined by a committee of the British Standards Institution BSI.

The Nokia Year 2000 Project is managed by the Nokia Year 2000 Steering Group, which consists of representatives of all Nokia business units and the various Year 2000 subprojects. The Steering Group is appointed by and reports regularly to the Nokia Group Executive Board.

The Nokia Year 2000 Project is divided into subprojects addressing Year 2000 issues in products and systems, production systems, R&D systems and after sales systems within Nokia Telecommunications, Nokia Mobile Phones, Nokia Communications Products, Nokia Ventures Organization and Nokia Research Center. Year 2000 subprojects for information systems (IM), facilities and supplier readiness are Nokia-wide. All subprojects are global and report monthly to the Nokia Year 2000 Steering Group and to their respective business units.

Products and systems

Nokia is undertaking a comprehensive program to test and verify the Year 2000 related status of its product portfolio and to appropriately resolve the relevant Year 2000 issues. To date, based on testing and verification, Nokia's display products, digital multimedia terminals and mobile phone battery charger products are Year 2000 compliant, and Nokia's mobile phone products as well as analog satellite receivers are either compliant, can be made compliant or are products that are not affected by the date code. For those products which to date are not compliant but can be made Year 2000 compliant, Nokia has compliance solutions in place.

To address the Year 2000 compliance issues for Nokia's telecommunications infrastructure products, Nokia has grouped the products into three categories based on the products, Year 2000 compliance status and Nokia's decision to provide or not to provide a technical solution for Year 2000 compliance. The three categories are: 1) products already Year 2000 compliant, 2) products to be made Year 2000 compliant, and 3) products that will not be made Year 2000 compliant. The majority of Nokia's infrastructure products to date are Year 2000 compliant, according to testing and verification by Nokia Telecommunications. For products classified as to be made Year 2000 compliant, Nokia plans to have the relevant compliance solutions during the first quarter of 1999. Products that will not be made compliant include a limited number of old products for which manufacturing has been terminated or for which newer products have been substituted.

Nokia's infrastructure customers include those with maintenance agreements and those who do not have such agreements. To those customers who do not have such maintenance agreements, Nokia intends to offer on a contract basis Year 2000 compliance upgrading. However, notwithstanding these efforts, for certain telecommunications products or systems it may not be possible to identify the user or the location of such products or systems in order to determine whether they are Year 2000 compliant.

Production Systems, R&D systems, after sales systems and other information systems (IM)

Nokia has completed an inventory of its production systems in its production sites worldwide and has categorized all such systems as critical or non-critical. Nokia aims to have all of those systems categorized as critical to be Year 2000 compliant during the first half of 1999. Nokia also continues to upgrade other production systems hardware and software and to conduct tests for their Year 2000 compliance. Nokia has plans in place to have its R&D related systems Year 2000 compliant during the first half of 1999.

Nokia aims to continue its production activities over the year-end 1999. To accomplish this, Nokia has implemented a "production sites by subsystems" approach, which integrates relevant Year 2000 issues arising from the production systems as well as from the facilities, supplier readiness and information systems subprojects.

During the fourth quarter of 1998, Nokia further instructed its Year 2000 Project to look into the after sales systems in use by Nokia or by customers using Nokia's products as a subproject within the Nokia Year 2000 Project. Nokia aims to have these after sales systems categorized as critical or non-critical during the first half of 1999 and to have those systems categorized as critical be Year 2000 compliant by the third quarter of 1999.

Nokia has also completed an inventory of its other information systems and has identified such systems as critical or non-critical. For critical information systems, Nokia plans to achieve Year 2000 compliance during the second half of 1999 at the latest.

Facilities

The detailed scope of the Year 2000 Project for Nokia's facilities includes such matters as building management, security, telephones, heating and air-conditioning systems and general equipment. Nokia expects to have identified relevant Year 2000 issues for such systems and equipment during the first quarter of 1999 and to have completed the necessary upgrading during the second half of 1999 at the latest.

Suppliers

Nokia sources materials, parts, products, information software and services from third parties which are then integrated or sold in connection with Nokia products or which are otherwise used by Nokia. Nokia has categorized its suppliers as critical or non-critical and plans to complete verifying the status of the materials, parts or products from all critical suppliers as well as their continued performance into the year 2000 during the first half of 1999.

Costs

Nokia's direct Year 2000 cost estimate is currently FIM 450 million, including planned investments in addressing the Year 2000 issue in products and systems, production systems, R&D systems, information systems (IM), facilities and supplier readiness. By the end of 1998, Nokia had spent approximately 50% of the estimated aggregate amount. The Nokia Year 2000 Project has not resulted in deferral of spending for other systems and equipment as planned. Cost estimates may vary in the future and will be updated as Nokia learns additional information concerning the status of its and third parties' Year 2000 compliance.

Risks and Contingency Plans

Nokia realizes that failing to correct material Year 2000 issues could result in an interruption in or failure of certain normal business activities and that such failures could have a material adverse effect on the company's business, results and financial condition. Nokia is also connected to critical suppliers, financial institutions, customers and other business partners through computer systems, and the failure of any of the critical interdependent information systems may materially and adversely affect Nokia.

Nokia's Year 2000 Project is intended to identify and address Year 2000 issues in its products, systems, and facilities, and to evaluate Year 2000 readiness of third parties on whom Nokia relies, and to the extent Nokia determines that Year 2000 issues have not been appropriately addressed it intends to develop contingency plans and to take steps so that all such contingency plans are implemented during second half of 1999 at the latest. Due to general uncertainties related to the Year 2000 issue, partly resulting from the uncertainties of the Year 2000 readiness of suppliers and other third parties, the actual effects of the Year 2000 issues on Nokia will be unknown until Year 2000. However, Nokia believes that its Year 2000 Project is significantly reducing the level of this uncertainty and, together with the planned compliance programs as well as subsequent contingency plans, will reduce these risks.

Principal Differences Between IAS and U.S. GAAP

Nokia's net profit under IAS was FIM 10,408 in 1998 compared to FIM 6,259 million in 1997 and FIM 3,263 million in 1996. Under U.S. GAAP, Nokia would have reported net income of FIM 10,461 million in 1998 compared to FIM 6,396 million in 1997 and FIM 3,302 million in 1996.

Nokia's Consolidated Financial Statements are prepared in accordance with IAS. The principal differences between IAS and U.S. GAAP that affect Nokia's net profit or loss, as well as its shareholders' equity, relate to the treatment of development costs, marketable securities, pension costs and, prior to 1998, deferred income taxes. In addition, the presentation of net profit and earnings per share under U.S. GAAP, as shown in Note 35, discloses income or loss from discontinued operations and the corresponding per share data. See Note 35 to the Consolidated Financial Statements for a description of the principal differences between IAS and U.S. GAAP.

ITEM 9A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Financial risk management

The continuously evolving financial and business environment creates a challenge for Nokia's Treasury function. The overall objective of Nokia's Treasury is to identify, evaluate and hedge financial risks in close co-operation with the business groups. The international organization of Nokia's Treasury enables the Company to provide the Group companies with financial services according to local needs and requirements. This process involves utilizing global financial markets. Treasury aims at minimizing the adverse effects caused by fluctuations in the financial markets on the profitability of the underlying businesses and thus on the financial performance of Nokia. Furthermore, the Treasury function aims at minimizing the number of external treasury transactions required at Group level.

Treasury operations are controlled by policies approved by the top management. Treasury Policy provides principles for overall financial risk management in Nokia. Operating Policies cover specific areas such as foreign exchange risk, interest rate risk, use of derivative financial instruments and investing excess liquidity. Business Groups have detailed Standard Operating Procedures covering for example foreign exchange exposure management. Derivative instruments are used for hedging purposes only.

Foreign exchange risk

Nokia operates globally and is thus exposed to foreign exchange risk arising from various currency combinations. Nokia's business and results of operations are from time to time affected by changes in exchange rates, particularly between the Finnish markka and other currencies such as the U.S. dollar, Japanese yen and UK pound. Foreign currency denominated assets and liabilities together with firm and probable purchase and sale commitments give rise to foreign exchange exposure. Foreign exchange exposures are managed against various local currencies, since Nokia has an increasing amount of production and sales outside Finland.

According to the foreign exchange policy guidelines of the Group, material open foreign exchange exposures are hedged. 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.

Nokia uses Value-at-Risk methodology (VaR) to assess the foreign exchange risk. The VaR figure represents the potential losses for a portfolio from adverse changes in market factors, for a specified time period and confidence level based on historical data. Historical volatilities and correlations are calculated over the preceding year and Monte Carlo simulation is used, which takes into account the non-linear value changes of certain derivative instruments. The VaR based net foreign exchange transaction risk figure after hedging transactions in Nokia Group with a one week horizon and 99% confidence level was FIM 65.7 million at December 31, 1998 (FIM 31.6 million in 1997). The average VaR figure in 1998 was FIM 47.6 million. The VaR figure fluctuated between FIM 28.5 million and FIM 65.7 million in 1998.

Since Nokia has subsidiaries outside Finland, the Finnish markka denominated value of the equity of Nokia is also exposed to fluctuations in exchange rates. The equity changes caused by movements in foreign exchange rates are shown as a translation difference in the Group consolidation. Nokia uses foreign exchange contracts and foreign currency denominated loans to hedge its equity exposure arising from foreign net investments. Exchange gains and losses resulting from the hedging transactions are offset against the translation differences arising from consolidation and are recorded in shareholders' equity. The Board of Directors provides the framework for hedging decisions. Actual decisions on the currency pairs to be hedged are supported by portfolio theory based quantitative methods. Foreign exchange translation risk is also measured by probability based value at risk methodology. The VaR based risk figure of the total net translation exposure using a one week target horizon and 99% confidence level was FIM 52.3 million as at December 31, 1998 (FIM 51.7 million in 1997). Translation risk was managed applying the same principles as during the previous year.

Interest rate risk

The Group is exposed to interest rate risk either through market value fluctuations of balance sheet items (i.e., price risk or changes in the interest expenses) or revenues (i.e., re-investment risk). Estimated future changes in cash flows and balance sheet structure also expose the Group to interest rate risk. Group companies are responsible for managing their short term interest rate exposure. Long term interest rate exposure of the Group is monitored and managed by Corporate Treasury. Due to the current balance sheet structure of Nokia, emphasis is placed on managing the interest rate risk of investments.

The Group hedges its interest rate exposure by using derivative financial instruments, such as interest rate swaps, forwards and options. The maturities of interest rate swaps are usually less than five years. Interest rate risk is managed by using duration based sensitivity analysis and by constantly monitoring the market value of the financial instruments. Investment portfolios are benchmarked against market rates in order to facilitate internal performance measurement.

The net interest rate sensitivity of the fixed income investments, loan portfolio and interest rate derivatives of Nokia was at the end of 1998 FIM −90 million for a 1% parallel interest rate rise (FIM +7 million in 1997). Corresponding sensitivity for a 1% parallel interest rate decline was FIM +89 million (FIM −10 million in 1997). Risks are actively monitored by the treasury units and the treasury management. The increase in the sensitivity to interest rate changes was mainly due to higher liquidity and a longer average maturity of the investment portfolio compared with the previous year.

Equity price risk

Nokia has certain investments in publicly traded companies. The market value of the equity investments on December 31, 1998 was FIM 739 million (FIM 438 million in 1997). A 10% adverse move in equity prices would have decreased the market value of the investments by FIM 74 million (FIM 44 million in 1997). Currently there are no outstanding derivative financial instruments designated as hedges of these equity investments.

ITEM 10. DIRECTORS AND OFFICERS OF REGISTRANT

Pursuant to the provisions of the Finnish Companies Act and the Company's Articles of Association, the control and management of the Company is divided among the shareholders in a general meeting, the Board of Directors and the Group Executive Board. The members of the Board of Directors are elected for a one-year term. At the Annual General Meeting held on March 17, 1999 Nokia's shareholders approved an amendment to the Company's Articles of Association, effective on April 9, 1999, pursuant to which the preparatory measures relating to the nomination of Board members are taken by the Nomination Committee.

The members of the Board of Directors elected at the Annual General Meeting on March 17, 1999, and selection of the Chairman and Vice-Chairman by the Board itself are set forth below.

Name	*Position*
Board of Directors	
Jorma Ollila	Chairman of the Board (1999), Board Member (1995). Chairman and Chief Executive Officer, Chairman of the Group Executive Board, Nokia Corporation
Iiro Viinanen	Vice-Chairman of the Board (1996), Board Member (1996). President and CEO, Pohjola Group Insurance Corporation, Investments
Pirkko Alitalo	Board Member (1992). Senior Executive Vice President, Pohjola Group Insurance Corporation
Edward Andersson ..	Board Member (1973). Professor Emeritus, University of Helsinki
Paul J. Collins	Board Member (1998). Vice Chairman of Citigroup Inc. and Director of Citicorp and Citibank N.A.
Bengt Holmström.. ..	Board Member (1999). Paul A. Samuelson Professor of Economics at the Massachusetts Institute of Technology
Jouko K. Leskinen ..	Board Member (1994). President and CEO of Sampo Group and member of the Board of Directors of Sampo Insurance Company plc
Robert F. W. van Oordt	Board Member (1998). Chairman of the Supervisory Board of NKF Holding N.V.
Vesa Vainio	Board Member (1993). Chairman of the Board of Directors of Merita Nordbanken Plc, President and member of the Board of Directors of Merita Plc and Vice Chairman of the Board of Directors of Nordbanken Holding AB (publ)

The executive officers of the Company are set forth below.

Name	*Position*
Group Executive Board	
Jorma Ollila	Chairman of the Board and Chief Executive Officer (1999), Chairman of the Group Executive Board (1992), Group Executive Board Member (1986) (joined Nokia 1985)
Pekka Ala-Pietilä	President, Nokia Corporation (1999), Group Executive Board Member (1992) (joined Nokia 1984)
Matti Alahuhta	President, Nokia Mobile Phones, Responsible for Nokia' operations in Japan, Group Executive Board Member (1993) (with Nokia 1975-82, rejoined 1984)
Sari Baldauf	President, Nokia Telecommunications (1997), Responsible for Nokia's operations in China, Group Executive Board Member (1994) (joined Nokia 1983)
Mikko Heikkonen ..	President, Network Systems, Nokia Telecommunications, Group Executive Board Member (1998) (joined Nokia 1975)
Olli-Pekka Kallasvuo ..	Executive Vice President, CFO, Responsible for Nokia' operations in the U.S., President, Nokia Inc. (1997), Group Executive Board Member (1990) (joined Nokia 1980)
Yrjö Neuvo..	Senior Vice President, Product Creation, Nokia Mobile Phones (1994), Group Executive Board Member (1993) (joined Nokia 1993)
Veli Sundbäck	Executive Vice President, Corporate Relations and Trade Policy, Group Executive Board Member (1996) (joined Nokia 1996)
Anssi Vanjoki	Senior Vice President, Europe & Africa, Nokia Mobile Phones, Group Executive Board Member (1998) (joined Nokia 1991)

Jorma Ollila became Chairman of the Board and Chief Executive Officer in 1999. He served as President and Chief Executive Officer of the Company from 1992 to 1999 and has served on the Group Executive Board since 1986 and as Chairman since 1992. Mr. Ollila joined the Company in 1985 and has served in several capacities, including President of Nokia Mobile Phones from 1990 to 1992; Senior Vice President, Finance of Nokia from 1986 to 1989; and Vice President, International Operations of Nokia from 1985 to 1986. Prior to joining the Company, Mr. Ollila was employed by Citibank Oy, serving on its Board of Management from 1983 to 1985. Mr. Ollila serves on the boards of directors of several companies, including ICL plc, Otava Publishing Company Ltd. and UPM-Kymmene Corporation. Mr. Ollila is 48 years old.

Pekka Ala-Pietilä was elected President of Nokia Corporation in 1999. He served as Executive Vice President and Deputy to the CEO from 1998 to 1999. He has acted as President of Nokia Communications Products since 1998, and a member of the Group Executive Board since 1992. Mr. Ala-Pietilä was President of Nokia Mobile Phones from 1992 to 1998 and Vice President of Nokia Mobile Phones for Product Marketing from 1991 to 1992 and for Strategic Planning from 1990 to 1991. From 1989 to 1990, he served as Marketing Manager of Nokia Mobile Phones. From 1988 to 1989, Mr. Ala-Pietilä served as Manager, Business Development at Nokia-Mobira. From 1984 to 1988, Mr. Ala-Pietilä held several positions at Nokia Data, most recently the position of Department Manager from 1987 to 1988. From 1982-1984, Mr. Ala-Pietilä served as Researcher at the Helsinki School of Economics and Business Administration. Mr. Ala-Pietilä serves on the board of directors of Alma Media Corporation. Mr. Ala-Pietilä is 42 years old.

Matti Alahuhta has been President of Nokia Mobile Phones and responsible for Nokia's operations in Japan since 1998 and a member of the Group Executive Board since 1993. Dr. Alahuhta was President of Nokia Telecommunications from 1992 to 1998 and Executive Vice President of Nokia Telecommunications during 1992; Senior Vice President of Nokia Telecommunications, Public Networks division from 1990 to 1992; Vice President of Nokia Telecommunications, Dedicated Networks division from 1986 to 1990; and Sales Director of Nokia Telecommunications, Transmission Systems division from 1984 to 1986. Dr. Alahuhta served as Sales Director for Rank Xerox from 1982 to 1984. Prior to 1982, Dr. Alahuhta was employed by Nokia Electronics as a Team Manager in the Information Systems division from 1980 to 1982 and as a Research and Development Engineer from 1975 to 1979. Dr. Alahuhta received his D.Tech. from Helsinki University of Technology in 1990. Dr. Alahuhta is 46 years old.

Sari Baldauf has been President of Nokia Telecommunications and responsible for Nokia' operations in China since 1998. Ms. Baldauf was Executive Vice President of Nokia APAC from 1997 to 1998 and President of Nokia Cellular Systems of Nokia Telecommunications from 1988 to 1996 and a member of the Group Executive Board since 1994. Ms. Baldauf was Vice President for Business Development of Nokia Telecommunications from 1987 to 1988; Assistant Vice President for Business Development and Venture Capital of Nokia, New York from 1986 to 1987; Vice President for Corporate Planning of Nokia Electronics from 1985 to 1986; and Planning Manager of Nokia Corporation from 1983 to 1985. Prior to joining Nokia in 1983, Ms. Baldauf was employed by Falcon Communications as Marketing Manager in Abu Dhabi from 1981 to 1982; the Finnish Institute of Exports as Training Officer from 1979 to 1980; and the Helsinki School of Economics and Business Administration as Researcher from 1977 to 1978. Ms. Baldauf is 43 years old.

Mikko Heikkonen has been President for Network Systems of Nokia Telecommunications since 1997 and a member of the Group Executive Board since 1998. Mr. Heikkonen was President for Network and Access Systems of Nokia Telecommunications from 1995 to 1996; Senior Vice President for Area Management of Nokia Telecommunications from 1993 to 1995 and Senior Vice President of Nokia Cellular Systems from 1988 to 1992. Mr. Heikkonen served as Director in System Sales in Nokia Data from 1985 to 1988; and General Manager, Nokia GmbH from 1983-1985. From 1975 to 1983 Mr. Heikkonen also held several positions at Nokia Electronics. Mr. Heikkonen is 49 years old.

Olli-Pekka Kallasvuo has been Executive Vice President and Chief Financial Officer since 1999, responsible for Nokia' operations in the U.S. since 1998 and President of Nokia Inc. since 1997. He served as Executive Vice President and Chief Financial Officer of Nokia from 1992 to 1996 and is a member of the Group Executive Board since 1990. From 1997 to 1998, he was Executive Vice President of Nokia Americas. Since 1980, Mr. Kallasvuo has served Nokia in several capacities including Senior Vice President, Finance from 1990 to 1992; Assistant Vice President, Finance from 1988 to 1990; Assistant Vice President, Legal Department from 1987 to 1988; and Legal Counsel from 1982 to 1987 and from 1980 to 1981. From 1977 to 1980 and 1981 to 1982, Mr. Kallasvuo was employed by Union Bank of Finland, first in the Trustee Department and then as Legal Counsel. Mr. Kallasvuo is a member of the Board of the Finnish Broadcasting Company and Telecommunications Industry Association and serves as Chairman of the board of directors of Nextrom Holding S.A. and Nokian Tyres plc. Mr. Kallasvuo is 45 years old.

Yrjö Neuvo has been Senior Vice President, Product Creation of Nokia Mobile Phones since 1994 and a member of the Group Executive Board since 1993. From 1993 to 1994, Professor Neuvo was Senior Vice President for Technology of Nokia. Prior to joining Nokia in 1993, Professor Neuvo had spent his career in various academic positions. From 1984 to 1992, Professor Neuvo was National Research Professor at the Academy of Finland. He was a Professor of Electrical Engineering at Tampere University of Technology from 1976 to 1992 and a Visiting Professor at the University of California, Santa Barbara from 1981 to 1982. Professor Neuvo has also held positions at Helsinki University of Technology and Cornell University. Professor Neuvo earned his Ph.D. in Electrical Engineering in 1974 from Cornell University. Professor Neuvo serves as Vice Chairman of the board of directors of Vaisala Corporation. Professor Neuvo is 55 years old.

Veli Sundbäck is Executive Vice President for Corporate Relations and Trade Policy and a member of the Group Executive Board since 1996. Prior to joining Nokia in 1996, Mr. Sundbäck held various international diplomatic positions for the Finnish Government in the Ministry for Foreign Affairs. He was Secretary of State from 1994 to 1996 and acting Secretary of State from 1993 to 1994. From 1990 to 1993 he was Under-Secretary of State for External Economic Relations, and from 1988 to 1990, he was Director General for External Economic Relations. From 1985 to 1988 Mr. Sundbäck served as Ambassador, Deputy Director General for External Economic Relations, and from 1984 to 1985 he was Director of Western Europe and General Matters at the Department for External Economic Relations. From 1979 to 1984, Mr. Sundbäck served as Deputy Permanent Representative at the Finnish Permanent Mission in Geneva and as Counsellor from 1977 to 1979. He was Second Secretary at the Finnish Mission in Brussels from 1973 to 1977, and Attaché and Second Secretary from 1970 to 1973. Mr. Sundbäck serves on the board of directors of Oy AGA Ab and Nextrom Holding S.A. Mr. Sundbäck is 52 years old.

Anssi Vanjoki has been Senior Vice President for Europe and Africa of Nokia Mobile Phones since 1994 and a member of the Group Executive Board since 1998. Mr. Vanjoki served as Vice President for Sales of Nokia Mobile Phones from 1991 to 1994. Prior to joining Nokia in 1991, Mr. Vanjoki was employed by Suomen 3M Oy, where he held various positions from 1980 to 1991, most recently the position of Sales Director from 1989 to 1991. Mr. Vanjoki is 42 years old.

ITEM 11. COMPENSATION OF DIRECTORS AND OFFICERS

For the year ended December 31, 1998, the aggregate compensation of all directors and executive officers who are members of the Board of Directors or the Group Executive Board, as a group (17 persons), was approximately FIM 26.4 million. Of this amount, approximately FIM 5.2 million was paid to the Group Executive Board pursuant to bonus arrangements. Non-executive members of the Board of Directors do not receive bonuses. The bonuses are paid based on Nokia's executive incentive scheme, which is performance-based. The compensation in the case of executive officers who are members of the Group Executive Board was mainly in the form of salaries and in the form of salaries and/or directors' fees in the case of directors.

ITEM 12. OPTIONS TO PURCHASE SECURITIES FROM REGISTRANT OR SUBSIDIARIES

On March 17, 1999, the Company's shareholders approved the issuance of a total of 36,000,000 stock options, divided into an equal number of "A", "B" and "C" stock options, to key personnel and to a wholly owned subsidiary of the Group as part of its incentive program for key personnel. Each option confers the holder the right to subscribe for one Share during the applicable subscription period. In aggregate, the "A" stock options confer the right to purchase up to a total of 12,000,000 Shares during the period from April 1, 2001 to December 31, 2004 at an exercise price of EUR 67.55 per Share. In aggregate the "B" stock options confer the right to purchase up to a total of 12,000,000 Shares during the period from April 1, 2002 to December 31, 2004 at an exercise price to be derived from the trade volume weighted average price of the Shares on the Helsinki Exchanges during the last five trading days in March 2000. In aggregate the "C" stock options confer the right to purchase up to a total of 12,000,000 Shares during the period from April 1, 2003 to December 31, 2004 at an exercise price to be derived from the trade volume weighted average price of the Shares on the Helsinki Exchanges during the last five trading days in March 2001. The maximum number of new Shares that may be issued upon exercise of the above stock options represents approximately 3.0% of the Company's total share capital.

Shareholders approved corresponding stock option plans in 1994, 1995 and 1997. In 1994, FIM 200,000 principal amount of 2% bonds due April 15, 1999 with warrants attached were issued to Nokia's management. The warrants confer the right to purchase an aggregate of 1,600,000 A Shares during the period from December 1, 1998 through January 31, 2000 at an exercise price of FIM 374 per eight A Shares.

In 1995, FIM 1.45 million principal amount of non-interest bearing bonds due May 31, 2000 with warrants attached were issued to Nokia's management. The warrants confer the right to purchase an aggregate of 11,600,000 A Shares during certain periods commencing December 1, 1997 through January 31, 2001 at an exercise price of FIM 168 for two A Shares.

In 1997, FIM 2,375 million principal amount of non-interest bearing bonds due April 16, 2000 with A, B and C warrants attached were issued to key personnel worldwide as part of Nokia's employee incentive program. The warrants confer the right to purchase up to a total of 19,000,000 A Shares at a price of FIM 307 for two A Shares during certain periods from December 1, 1997 through January 31, 2003.

On March 17, 1999, the Company's shareholders at the Annual General Meeting approved certain amendments to the terms and conditions of the 1994, 1995 and 1997 stock option plans. These amendments, which will take effect on April 9, 1999, will double the number of Shares to be subscribed for upon exercise of warrants to reflect the two-for-one stock split, redesignate the A Shares to be subscribed for from to Shares, and adjust the par value per Share to reflect the redenomination into euro of the Company's Shares, and the bonus issue to round up to nominal value of a Share to EUR 0.24. See also "Item 4 Control of the Registrant".

As of December 31, 1998, 3,235,738 warrants had been exercised at an average exercise price of FIM 109.31 per A Share and an aggregate of 6,496,606 A Shares had been issued.

In connection with the acquisition of Ipsilon, Nokia assumed Ipsilon's 1995 stock option plan (the "Ipsilon Plan"). All employees, officers, directors and consultants of or to Ipsilon are eligible to participate in the Ipsilon Plan. The Board of Directors of Ipsilon (the "Ipsilon Board"), as the Plan Administrator, has full discretion to determine the persons eligible to participate in the Ipsilon Plan and may grant options as "Incentive Stock Options" under the U.S. Internal Revenue Code or as non-qualified options.

The exercise price for options granted pursuant to the Ipsilon Plan is set by the Ipsilon Board and may not be less than 85% of the fair market value per ADS on the option grant date in the case of non-qualified options and 100% of the fair market value per ADS on the option grant date in the case of Incentive Stock Options. The options may be granted for terms of up to 10 years after the option grant date.

The maximum aggregate number of ADSs that may be issued pursuant to the Ipsilon Plan is 420,658. At December 31, 1998, options to purchase 349,129 ADSs were outstanding at an average exercise price of $24.40 per ADS.

The following table sets forth the number of warrants held by members of the Group Executive Board on March 19, 1999. The warrants were issued pursuant to stock option plans approved by the Company's shareholders in 1997 and 1995 described above. Each warrant is exercisable for two A Shares. No warrants have been issued to non-executive members of the Board of Directors.

Jorma Ollila	148,000
Pekka Ala-Pietilä	74,000
Matti Alahuhta	74,000
Sari Baldauf	74,000
Mikko Heikkonen	50,000
Olli-Pekka Kallasvuo	68,000
Yrjö Neuvo	74,000
Veli Sundbäck	74,000
Anssi Vanjoki	54,000
All members of the Board of Directors and Group Executive Board as a group	690,000

Due to the stock split effective as of April 9, 1999, and the related amendments to the terms and conditions of the 1995 and 1997 stock option plans, the number of Shares to be subscribed for will be doubled.

ITEM 13. INTERESTS OF MANAGEMENT IN CERTAIN TRANSACTIONS

There have been no material transactions during the last three years to which any Director or Executive Officer, or 10% shareholder, or any relative or spouse thereof was a party. There is no significant outstanding indebtedness to the Company by any Director or Executive Officer or 10% shareholder.

PART II

ITEM 14. DESCRIPTION OF SECURITIES TO BE REGISTERED

Not Applicable.

PART III

ITEM 15. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 16. CHANGES IN SECURITIES AND CHANGES IN SECURITY FOR REGISTERED SECURITIES

See "Item 4 — Control of the Registrant — Annual General Meeting Resolutions — Stock Split".

PART IV

ITEM 17. FINANCIAL STATEMENTS

Not Applicable.

ITEM 18. FINANCIAL STATEMENTS

The Financial Statements filed as part of this Annual Report are contained on pages F-1 through F-34.

ITEM 19. FINANCIAL STATEMENTS AND EXHIBITS

(a) Financial Statements

The following financial statements together with the report of PricewaterhouseCoopers and KPMG are filed as part of this Annual Report on Form 20-F.

Consolidated Financial Statements

(b) Exhibits

1. Consents of PricewaterhouseCoopers and KPMG, Independent Accountants

The Company agrees to furnish to the Securities and Exchange Commission upon request by the Commission a list or diagram of its subsidiaries indicating as to each subsidiary named: (a) its country or other jurisdiction of incorporation or organization, (b) its relationship to the Company, and (c) the percentage of voting securities owned or other basis of control by its immediate parent if any.

REPORT OF INDEPENDENT ACCOUNTANTS

To the Board of Directors and Shareholders of
NOKIA CORPORATION

We have audited the accompanying consolidated balance sheet of Nokia Corporation and Subsidiaries as of December 31, 1998 and 1997, and the related consolidated statements of profit and loss and cash flow for each of the three years in the period ended December 31, 1998, all expressed in Finnish markka. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in Finland, which are substantially the same as those followed in the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Nokia Corporation and Subsidiaries as of December 31, 1998 and 1997, and the consolidated results of their operations and cash flows for each of the three years in the period ended December 31, 1998, in conformity with International Accounting Standards.

International Accounting Standards vary in certain respects from accounting principles generally accepted in the United States. The application of the latter would have affected the determination of consolidated net profit for each of the three years in the period ended December 31, 1998, and the determination of consolidated shareholders' equity at December 31, 1998 and 1997, to the extent summarized in Note 35 to the consolidated financial statements.

Espoo, Finland
January 29, 1999,
except for Note 34 as to which
the date is March 17, 1999

/s/ LARS BLOMQUIST
Lars Blomquist
Authorized Public Accountant
PricewaterhouseCoopers

/s/ ERIC HAGLUND
Eric Haglund
Authorized Public Accountant
KPMG

NOKIA CORPORATION AND SUBSIDIARIES

CONSOLIDATED PROFIT AND LOSS ACCOUNT
Financial year ended December 31

	Notes	*1998*	*1998*	*1997*	*1996*
		MEUR	*MFIM*	*MFIM*	*MFIM*
Net sales		13,326	79,231	52,612	39,321
Costs of goods sold		(8,299)	(49,342)	(33,999)	(28,029)
Research and development expenses		(1,150)	(6,838)	(4,560)	(3,514)
Selling, general and administrative expenses		(1,388)	(8,252)	(5,599)	(3,512)
Operating profit	2, 3, 4, 5, 6 and 7	2,489	14,799	8,454	4,266
Share of results of associated companies		6	38	54	37
Financial income and expenses	8	(39)	(234)	(137)	(405)
Profit before tax and minority interests		2,456	14,603	8,371	3,898
Tax	9	(737)	(4,380)	(2,274)	(856)
Minority interests		(39)	(231)	(99)	2
Profit from continuing operations		1,680	9,992	5,998	3,044
Discontinued operations	10	—	—	261	219
Profit from ordinary activities before cumulative effect of change in accounting policies		1,680	9,992	6,259	3,263
Cumulative prior year net effect of change in accounting policies		70	416	—	—
Net profit		1,750	10,408	6,259	3,263

	Notes	*1998*	*1998*	*1997*	*1996*
		EUR	*FIM*	*FIM*	*FIM*
Earnings per share					
Continuing operations					
Basic		2.95	17.56	10.59	5.37
Diluted		2.86	17.03	10.40	
Net Profit					
Basic	25	3.08	18.29	11.05	
Diluted	25	2.98	17.74	10.86	

See Notes to Consolidated Financial Statements

NOKIA CORPORATION AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEET
December 31

	Notes	1998 MEUR	1998 MFIM	1997 MFIM
ASSETS				
Fixed assets and other non-current assets				
Intangible assets	11	484	2,880	2,061
Property, plant and equipment	12	1,331	7,912	6,240
Investments in associated companies	13	90	539	335
Investments in other companies	13	75	445	454
Long-term loan receivables		10	59	160
Deferred tax assets	21	196	1,163	—
Other non-current assets		34	202	195
		2,220	13,200	9,445
Current assets				
Inventories	14	1,292	7,684	7,314
Receivables, less allowances for doubtful accounts (Dec. 31, 1998 MFIM 390, Dec. 31, 1997 MFIM 135)	15	3,631	21,588	12,732
Short-term investments		2,165	12,874	9,363
Bank and cash		726	4,314	2,884
		7,814	46,460	32,293
Total assets		10,034	59,660	41,738
SHAREHOLDERS' EQUITY AND LIABILITIES				
Shareholders' equity	17			
Share capital		255	1,514	1,499
Share issue premium		909	5,405	4,776
Treasury shares		(110)	(654)	(654)
Other reserves		121	722	766
Retained earnings		3,934	23,392	15,137
		5,109	30,379	21,524
Minority interests		63	376	195
Long-term liabilities	18			
Long-term interest-bearing liabilities		257	1,530	1,348
Deferred tax liabilities	21	88	522	—
Other long-term liabilities		64	377	295
		409	2,429	1,643
Current liabilities				
Short-term borrowings	23	699	4,157	3,008
Current portion of long-term debt	18	61	361	285
Accounts payable and accrued liabilities	22	3,615	21,496	14,541
Advance payments		78	462	542
		4,453	26,476	18,376
Total shareholders' equity and liabilities		10,034	59,660	41,738

See Notes to Consolidated Financial Statements

NOKIA CORPORATION AND SUBSIDIARIES

CONSOLIDATED CASH FLOW STATEMENT
Financial year ended December 31

	Notes	1998 MEUR	1998 MFIM	1997 MFIM	1996 MFIM
Cash flow from operating activities					
Operating Profit		2,489	14,799	8,454	4,266
Adjustments, total	30	501	2,977	2,552	2,209
Operating profit before change in net working capital		2,990	17,776	11,006	6,475
Change in net working capital	30	(451)	(2,680)	877	2,993
Cash generated from operations		2,539	15,096	11,883	9,468
Interest received		134	795	703	451
Interest paid		(210)	(1,246)	(1,031)	(874)
Other financial income and expenses		(3)	(20)	280	(65)
Income taxes paid		(773)	(4,596)	(1,634)	(661)
Net cash from operating activities		1,687	10,029	10,201	8,319
Cash flow from investing activities					
Acquisition of Group companies, net of acquired cash		(76)	(450)	(505)	(127)
Treasury shares acquired		—	—	—	(210)
Investments in other shares		(51)	(305)	(47)	(48)
Additions in capitalized R&D costs		(182)	(1,079)	(949)	(677)
Capital expenditures		(761)	(4,527)	(2,402)	(2,028)
Discontinued operations, net of disposed cash		—	—	86	(378)
Proceeds from disposal of shares in Group companies, net of disposed cash		85	506	5	—
Treasury shares sold		—	—	81	—
Proceeds from sale of other shares		16	93	227	74
Proceeds from sale of fixed assets		182	1,085	506	293
Dividends received		7	39	26	27
Net cash used in investing activities		(780)	(4,638)	(2,972)	(3,074)
Cash flow from financing activities					
Proceeds from issuance of share capital		108	643	72	—
Capital investment by minority shareholders		16	95	—	—
Proceeds from (+), payments of (−) long-term liabilities		66	391	(1,027)	242
Proceeds from (+), payments of (−) short-term borrowings		275	1,638	(980)	(675)
Proceeds from (+), payments of (−) long-term receivables		(8)	(49)	107	153
Proceeds from (+), payments of (−) short-term receivables		(146)	(869)	248	(758)
Dividends paid		(374)	(2,221)	(1,061)	(901)
Net cash used in financing activities		(63)	(372)	(2,641)	(1,939)
Net increase in cash and cash equivalents		844	5,019	4,588	3,306
Cash and cash equivalents at beginning of period		2,047	12,169	7,659	4,239
Cash and cash equivalents at end of period		2,891	17,188	12,247	7,545

The above figures cannot be directly traced from the balance sheet without additional information as a result of acquisitions and disposals of subsidiaries and net foreign exchange differences arising on consolidation. The schedule shown below reconciles cash and cash equivalents at the end of the previously reported period to cash and cash equivalents reported for the beginning of the current period.

	1998	1998	1997	1996
	MEUR	MFIM	MFIM	MFIM
Reconciliation:				
As previously reported for 1997, 1996 and 1995, respectively ..	2,060	12,247	7,545	4,214
Foreign exchange adjustment	(13)	(78)	114	25
	2,047	12,169	7,659	4,239
Net increase in cash and cash equivalents	844	5,019	4,588	3,306
As reported for 1998, 1997 and 1996, respectively	2,891	17,188	12,247	7,545

See Notes to Consolidated Financial Statements

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

1. Accounting principles

Basis of presentation

The consolidated financial statements of Nokia Corporation ("Nokia" or "the Group") a Finnish limited company with domicile in Helsinki, are prepared in accordance with International Accounting Standards (IAS).

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the dates of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Accounting convention

The financial statements are presented in Finnish markkas and are prepared under the historical cost convention.

Solely for the convenience of the reader, the consolidated financial statements as of and for the year ended December 31, 1998 have been converted into euros (EUR) at the rate of 5.94573 Finnish markka (FIM) per euro, the conversion ratio announced on December 31, 1998.

Principles of consolidation

The consolidated financial statements include the accounts of the parent company, Nokia Corporation, and each of those companies in which it owns, directly or indirectly through subsidiaries, over 50% of the voting rights. The accounts of certain companies in which Nokia has management control are also consolidated. Certain real estate and housing companies, as well as small companies which had no operations during the financial year, have, however, been left out of the consolidated financial statements. The effect of these companies on the Group's result and shareholders' equity is immaterial. The companies acquired during the financial period have been consolidated from the date the responsibility for their operations was transferred to the Group. Similarly the result of a Group company divested during an accounting period is included in the Group accounts only to the date of disposal.

All inter-company transactions are eliminated as part of the consolidation process. Minority interests are presented separately in arriving at the profit from continuing operations. They are also shown separately from shareholders' equity and liabilities in the consolidated balance sheet.

Acquisitions of companies are accounted for using the purchase method. Goodwill represents the excess of the purchase cost over the fair value of assets less liabilities of acquired companies. Goodwill is amortized on a straight-line basis over its expected useful life. Useful lives vary between two and five years depending upon the nature of the acquisition, unless a longer period not exceeding 20 years can be justified. Expected useful lives are reviewed at each balance sheet date and where these differ significantly from previous estimates, amortization periods are changed accordingly.

The Group's share of profits and losses of associated companies is included in the consolidated profit and loss account in accordance with the equity method of accounting. The Group's share of post acquisition reserves (retained earnings and other reserves) is added to the cost of associated company investments in the consolidated balance sheet.

Profits realized in connection with the sale of fixed assets between the Group and associated companies are eliminated in proportion to share ownership. Such profits are deducted from the Group's equity and fixed assets and released in the Group accounts over the same period as depreciation is charged.

Investments in other companies (voting rights less than 20%) and also some joint ventures in start-up phase are stated at cost; provision is made when there has been an other than temporary decline in value.

Transactions in foreign currencies

Transactions in foreign currencies are recorded at the rates of exchange prevailing at the dates of the transactions. For practical reasons, a rate that approximates the actual rate at the date of the transaction is often used. At the end of the accounting period the unsettled balances on foreign currency receivables and liabilities are valued at the rates of exchange prevailing at the year-end. Foreign exchange gains and losses related to normal business operations are treated as adjustments to cost of goods sold. Foreign exchange gains and losses associated with financing are entered as a net amount under financial income and expenses.

Foreign Group companies

In the consolidated accounts all items in the profit and loss accounts of foreign subsidiaries are translated into Finnish markka at the average exchange rates for the accounting period. The balance sheets of foreign Group companies are translated into Finnish markka at the rates of exchange ruling at the year-end. Exchange differences arising from the application of the purchase method are treated as an adjustment affecting consolidated shareholders' equity. Differences resulting from the translation of profit and loss account items at the average rate and the balance sheet items at the closing rate are taken to retained earnings. On the disposal of a foreign group company, the cumulative amount of the translation difference is recognized as income or as expense in the same period in which the gain or loss on disposal is recognized.

The Group's policy is to hedge a portion of foreign subsidiaries' shareholders' equity to reduce the effects of exchange rate fluctuations on the Group's net investments in foreign Group companies. Exchange gains and losses resulting from the hedging transactions are offset against the translation differences arising from consolidation and recorded in shareholders' equity.

Derivative financial instruments

The Group enters into derivative financial instruments such as forward foreign exchange and option contracts to hedge its exposure against foreign currency fluctuations on certain assets, liabilities and probable transactions denominated in foreign currencies. In accordance with its Treasury policy, Nokia does not currently hold or issue derivative financial instruments for trading purposes. Any deferred gains and losses arising from hedging transactions are shown as a part of the cost of goods sold when the sale or purchase transactions are recognized. Derivative contracts used for hedging foreign exchange exposure have high correlation with the items being hedged, both at inception and throughout the hedge period; and are designated to the underlying exposure. The majority of derivative financial instruments hedging foreign exchange exposures have a duration of less than a year. Written options are only used as part of combination strategies.

Foreign exchange gains and losses on forward contracts are calculated by valuing the forward contract with the spot exchange rate prevailing on the reporting date and comparing that with the original amount calculated by using the spot rate prevailing at the beginning of the contract. The interest rate differential of the forward contract is accrued over the life of the contract as part of the financial income or expenses.

Premiums paid for purchased foreign exchange options are included in other current receivables and premiums received for written options are included in other current payables in the balance sheet. Option contracts are valued at the balance sheet date by using the Garman & Kohlhagen option valuation model. Foreign exchange gains or losses on the option contracts, i.e. the difference between the premium paid or received and the market value of the options at the reporting date, is shown as a part of the cost of goods sold when the sale or purchase transaction is recognized.

The Group enters into derivative financial instruments such as interest rate swaps, forwards, futures and options to hedge its exposure to interest rate risk. Interest payable and receivable under interest rate swaps is accrued and recorded as an adjustment to the interest income or expense related to the designated asset or liability. Amounts received or paid on cash settlement, representing the gain or loss, of interest rate forward contracts are deferred and recognized over the life of the underlying financial instrument as an adjustment to interest income or expense. Premiums paid for purchased interest rate options are included in other current receivables and premiums received for written options are included in other current payables in the balance sheet. Premiums are amortized to interest income or expense over the life of the agreements. Amounts receivable and payable under the agreements are recognized as yield adjustments over the life of the contract.

Revenue recognition

Sales are recorded upon shipment of products and customer acceptance, if any, or performance of services, net of sales taxes and discounts. Revenues from large long-term contracts are recognized on the percentage of completion method. Provisions are made to cover anticipated losses on contracts.

Research and development

Research and development costs are expensed in the financial period during which they are incurred, except for certain development costs which are capitalized when it is probable that a development project will be a success, and certain criteria, including commercial and technological feasibility, have been met. Capitalized development costs are amortized on a systematic basis over their expected useful lives. The amortization period is between 2 and 5 years.

Maintenance, repairs and renewals

Maintenance, repairs and renewals are generally charged to expense during the financial period in which they are incurred. However, major renovations are capitalized and depreciated over their expected useful lives.

Pensions and coverage of pension liabilities

The Group companies have various pension schemes in accordance with the local conditions and practices in the countries in which they operate. The schemes are generally funded through payments to insurance companies or to trustee-administered funds as determined by periodic actuarial calculations. Any deficits or benefits requiring additional contributions are funded through payments allocated over a period of years not exceeding the expected remaining working lives of the participating employees.

The Group has met minimum funding requirements for the countries in which it maintains pension schemes.

Property, plant and equipment

Property, plant and equipment are stated at cost less accumulated depreciation.

Depreciation is recorded on a straight-line basis over the expected useful lives of the assets, based on the following useful lives:

Buildings	20-33 years
Machinery and equipment	3-10 years

Land and water areas are not depreciated.

Gains and losses on the disposal of fixed assets are included in operating profit/loss.

Leasing

Operating lease payments are treated as rentals. Assets acquired under finance leases are treated as fixed assets, and the present value of the related lease payments is recorded as a liability.

Inventories

Inventories are stated at the lower of cost and net realizable value. Cost is determined 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 overheads is included in the inventory values.

Cash and cash equivalents

Cash and cash equivalents consist of cash on hand and balances with banks and short-term investments.

Income taxes

Current taxes are based on the results of the Group companies and are calculated according to local tax rules.

Beginning January 1, 1998, deferred income tax is provided, using the liability method, for all temporary differences arising between the tax basis of assets and liabilities and their carrying values for financial reporting purposes. Currently enacted tax rates are used to determine deferred income tax.

Under this method the Group is required, in relation to an acquisition, to make provision for deferred taxes on the difference between the fair values of the net assets acquired and their tax base.

The principal temporary differences arise from intercompany profit in inventory, depreciation on property, plant and equipment, untaxed reserves and tax losses carried forward. Deferred tax assets relating to the carryforward of unused tax losses are recognized to the extent that it is probable that future taxable profit will be available against which the unused tax losses can be utilized.

Discontinued operations

A discontinued operation results from the sale or abandonment of an operation that represents a separate, major line of business and of which the assets, net profit or losses and activities can be distinguished physically, operationally and for financial reporting purposes. The profit effect of discontinued operations, net of tax, is separately disclosed. The gain or loss on discontinuance represents the estimated proceeds less the net assets of the discontinued operation after allowance has been made for any losses expected to occur prior to disposal.

Dividends

Dividends proposed by the Board of Directors are not recorded in the financial statements until they have been approved by the shareholders at the Annual General Meeting.

Earnings per share

The Group calculates both basic and diluted earnings per share in accordance with IAS 33, Earnings per Share. Under IAS 33 the weighted average number of shares used to calculate basic EPS is the same as that previously reported for the calculation of earnings per share. The weighted average number of shares used to calculate diluted earnings per share is adjusted to take into consideration the dilutive effect of the stock warrants and options outstanding during the year. EPS for 1997 has been restated to conform with the 1998 presentation.

Changes in International Accounting Standards

Beginning January 1, 1999, the Group will adopt IAS standards required to be adopted including revised IAS 19, Employee Benefits, and recognize liabilities for defined benefit plans using the projected unit credit method.

2. Segment information

	Telecom-munications	*Mobile Phones*	*Other Operations*	*Eliminations*	*Group total*
Net sales					
1998, MFIM	26,103	47,984	6,029	(885)	79,231
1997, MFIM	18,826	27,643	7,239	(1,096)	52,612
1996, MFIM	13,333	21,579	5,197	(788)	39,321
Operating profit/loss					
1998, MFIM	5,706	9,158	(65)	—	14,799
1997, MFIM	4,053	3,837	564	—	8,454
1996, MFIM	2,982	1,431	(147)	—	4,266
Capital expenditure					
1998, MFIM	1,291	2,899	337	—	4,527
1997, MFIM	1,037	886	479	—	2,402
1996, MFIM	825	614	589	—	2,028
Identifiable assets					
1998, MFIM	17,378	22,055	39,630	(19,403)	59,660
1997, MFIM	14,426	12,659	26,608	(11,955)	41,738
1996, MFIM	10,205	9,369	16,091	(2,390)	33,275

Net sales by market area	*1998 MFIM*	*1997 MFIM*	*1996 MFIM*
Finland	2,763	2,557	2,440
Other European countries	41,011	26,914	20,587
Americas	16,740	9,520	6,334
Asia-Pacific	16,873	12,105	8,788
Other countries	1,844	1,516	1,172
Total	79,231	52,612	39,321

3. Percentage of completion method

Profit on large long-term contracts is recognized when sale is recorded on part-delivery of products or part performance of services, provided that the outcome of the contract can be assessed with reasonable certainty. Most of the Group's net sales arise from businesses other than those of a long-term project nature. Project deliveries occur in Nokia Telecommunications' Network Systems division, where part of its net sales (FIM 6.2 billion in 1998, FIM 6.6 billion in 1997 and FIM 4.2 billion in 1996) were of a long-term project nature.

4. Personnel expenses

	1998	*1997*	*1996*
	MFIM	*MFIM*	*MFIM*
Wages and salaries	9,557	6,338	4,475
Pension expenses	825	656	181
Other social expenses	1,258	836	688
Personnel expenses as per profit and loss account	11,640	7,830	5,344
Remuneration of the members of the Boards of Directors, Group Executive Board, President and Chief Executive Officer, and Presidents and Managing Directors*	67	64	43
* Salaries include incentives	15	5	4

Pension commitments for the management:

The retirement age of the management of the Group companies is between 60-65 years.

For the Chief Executive Officer of the Parent Company the retirement age is 60 years.

5. Selling and marketing expenses, administration expenses and other operating income and expenses

	1998	*1997*	*1996*
	MFIM	*MFIM*	*MFIM*
Selling and marketing expenses	(5,381)	(4,148)	(2,842)
Administration expenses	(2,744)	(1,323)	(616)
Other operating expenses	(557)	(548)	(225)
Other operating income	430	420	171
Total	(8,252)	(5,599)	(3,512)

Other operating income for 1998 includes a gain of FIM 177 million arising from the sale of the 100%-owned subsidiary LK-Products to the UK-based Filtronic plc. In 1997 other operating income included a gain of FIM 129 million that arose from the sale of the audioelectronics business.

6. Acquisitions

In December 1998 Nokia acquired Vienna Systems Corporation, an Internet Protocol telephony company based in Canada. The purchase price was FIM 429 million paid in cash. The fair value of net assets acquired was FIM 10 million giving rise to goodwill of FIM 419 million.

In December 1997 Nokia acquired all of the issued share capital, including outstanding share options, of Ipsilon Networks Inc., a telecommunications research and development company based in California at a total purchase cost of FIM 570 million, of which FIM 485 million was satisfied in cash and FIM 85 million in Nokia A shares. The fair value of net assets acquired was FIM 80 million, largely comprising cash and cash equivalents and giving rise to goodwill of FIM 490 million. Net losses for 1997, which are consolidated in the financial statements from the date of acquisition, mainly comprise goodwill amortization.

7. Depreciation and amortization

Depreciation and amortization charged against operations pertains to the following assets:

	1998	*1997*	*1996*
	MFIM	*MFIM*	*MFIM*
Capitalized research & development costs	707	559	674
Buildings and constructions	110	138	117
Machinery and equipment	1,911	1,612	1,316
Goodwill and other assets	300	453	129
Total	3,028	2,762	2,236
Depreciation by function			
Costs of goods sold	940	805	669
Research & development	1,328	1,021	1,068
Selling, general and administrative expenses:			
Selling, marketing and administration	474	359	241
Other operating expenses	168	231	233
Goodwill	118	346	25
Total	3,028	2,762	2,236

8. Financial income and expenses

	1998	*1997*	*1996*
	MFIM	*MFIM*	*MFIM*
Income from long-term investments			
Dividend income	39	26	27
Interest income	6	4	23
Other interest and financial income			
Interest income from short-term investments	967	727	510
Other financial income	6	42	8
Exchange gains and losses	(40)	106	27
Interest expenses and other financial expenses			
Interest expenses	(1,176)	(1,006)	(966)
Other financial expenses	(36)	(36)	(34)
Total	(234)	(137)	(405)

9. Income taxes

	1998	*1997*	*1996*
	MFIM	*MFIM*	*MFIM*
Current tax	(4,473)	(2,274)	(856)
Deferred tax	93	—	—
Total	(4,380)	(2,274)	(856)
Finland	(2,974)	(1,846)	(605)
Other countries	(1,406)	(428)	(251)
	(4,380)	(2,274)	(856)

At December 31, 1998, the Group had loss carryforwards, primarily attributable to foreign subsidiaries, of FIM 990 million, most of which have no expiration dates.

The differences between income tax expense computed at statutory rates (28% in Finland in 1998, 1997 and 1996) and income tax expense provided on earnings are as follows at December 31:

	1998	*1997*	*1996*
	MFIM	*MFIM*	*MFIM*
Income tax expense at statutory rate	4,195	2,402	1,142
Untaxed reserves	—	67	97
Benefit of foreign operating loss carryforwards	—	(872)	(650)
Deduction for write-down of investments in subsidiaries	(73)	2	(46)
Amortization of goodwill	33	97	23
Provisions without income tax benefit/expense	287	138	(126)
Taxes for prior years	42	(65)	71
Taxes on foreign subsidiaries' net income in excess of income taxes at statutory rates	269	110	248
Operating losses with no current tax benefit	96	315	270
Group adjustments	91	6	(58)
Adjustment to opening balance accruals	(428)	—	—
Cumulative adjustments; Change in accounting principle	(116)	—	—
Other	(16)	74	(115)
Income tax expense	4,380	2,274	856

Certain of the Group's subsidiaries' income tax returns for periods ranging from 1992 through 1997 are under examination by tax authorities. The Group does not believe that any significant additional taxes will arise as a result of the examinations.

10. Discontinued operations

In February 1996, Nokia announced its intention to exit the TV business. In June of that year, Nokia announced the sale of its television production and related technology units in Turku, Finland, to the Semi-Tech (Global) Company. The transaction also included the sale of machinery and equipment of the Nokia Bochum television factory in Germany, where manufacturing was terminated in September, Nokia's international television sales activities in Europe, and the television related R&D center in Germany. The financial impact of the decision to withdraw from the television business was reported in the 1995 accounts as discontinued operations. The results of these operations during the year 1996 did not affect the Group's financial performance in 1996. In 1997 Nokia completed the exit from the TV business, resulting in a FIM 261 million positive release of the excess provision in the 1997 financial statements.

Following the contribution of the Group's wholly-owned Chemicals business to a 50/50 joint venture company (Finnish Chemicals) with Kymmene in 1991, the Group finally exited the Chemicals business at the end of 1996 with the disposal of its 50% interest, which resulted in a net of tax gain of FIM 192 million. The equity accounted earnings attributable to Nokia's 50% interest in Finnish Chemicals amounted to FIM 50 million in 1996 up to the date of disposal.

Nokia divested its remaining 55% shareholding in the Dutch cable making company NKF in March, 1996. Following this transaction, Nokia's only remaining interest in the cable business is its majority shareholding in the Turkish Türkkablo A.O. Nokia intends to divest its holdings of these shares. The net sales of the cable business in 1996 were FIM 589 million.

	1998	1997	1996
	MFIM	MFIM	MFIM
Divestment of Chemicals business, net of tax	—	—	242
Divestment and discontinuation of Cables business, net of tax	—	—	(23)
Discontinuation of TV business	—	261	—
Discontinued operations	—	261	219

11. Intangible assets

	1998	1997
	MFIM	MFIM
Capitalized R&D costs		
Acquisition cost Jan. 1	2,787	2,534
Additions	1,080	929
Disposals	(3)	(676)
Accumulated amortization Dec. 31	(2,144)	(1,439)
Net carrying amount Dec. 31	1,720	1,348
Intangible rights		
Acquisition cost Jan. 1	640	476
Additions	227	212
Disposals	(53)	(48)
Translation differences	(1)	—
Accumulated amortization Dec. 31	(468)	(375)
Net carrying amount Dec. 31	345	265
Goodwill		
Acquisition cost Jan. 1	1,585	1,093
Additions	477	492
Accumulated amortization Dec. 31	(1,470)	(1,350)
Net carrying amount Dec. 31	592	235
Other intangible assets		
Acquisition cost Jan. 1	327	218
Additions	90	120
Disposals	(21)	(11)
Translation differences	(2)	—
Accumulated amortization Dec. 31	(171)	(114)
Net carrying amount Dec. 31	223	213

12. Property, plant and equipment

	1998	1997
	MFIM	MFIM
Land and water areas		
Acquisition cost Jan. 1	383	393
Additions	70	33
Disposals	(44)	(61)
Translation differences	(8)	18
Net carrying amount Dec. 31	401	383
Buildings and constructions		
Acquisition cost Jan. 1	2,517	2,013
Additions	390	515
Disposals	(155)	(51)
Translation differences	(19)	40
Accumulated depreciation Dec. 31	(544)	(600)
Net carrying amount Dec. 31	2,189	1,917
Machinery and equipment		
Acquisition cost Jan. 1	8,628	6,960
Additions	2,472	1,871
Disposals	(1,013)	(301)
Translation differences	(68)	98
Accumulated depreciation Dec. 31	(5,886)	(5,070)
Net carrying amount Dec. 31	4,133	3,558
Other tangible assets		
Acquisition cost Jan. 1	438	501
Additions	214	111
Disposals	(130)	(202)
Translation differences	(9)	28
Accumulated depreciation Dec. 31	(221)	(212)
Net carrying amount Dec. 31	292	226
Advance payments and fixed assets under construction		
Acquisition cost Jan. 1	156	414
Additions	971	359
Disposals	(43)	(93)
Transfers		
Land and water areas	—	(2)
Buildings and constructions	(9)	(378)
Machinery and equipment	(173)	(144)
Other tangible assets	(1)	(6)
Translation differences	(4)	6
Net carrying amount Dec. 31	897	156

13. Investments

	1998	*1997*
	MFIM	*MFIM*
Shares in unlisted companies	146	117
Shares in listed companies	299	337
Investments in associated companies	539	335
Total	984	789

Shareholdings in associated companies include listed investments of FIM 133 million. At the balance sheet date, the fair value of these investments, based on quoted market prices, was FIM 503 million. Shareholdings in other companies include listed investments of FIM 299 million. At the balance sheet date, the fair value of these investments was FIM 739 million.

14. Inventories

	1998	*1997*
	MFIM	*MFIM*
Raw materials, supplies and other	2,818	2,520
Work in progress	2,677	2,545
Finished goods	2,189	2,249
Total	7,684	7,314

15. Receivables

	1998	*1997*
	MFIM	*MFIM*
Accounts receivable	16,681	9,748
Short-term loan receivables	953	363
Prepaid expenses and accrued income	3,954	2,621
	21,588	12,732

Current receivables falling due after one year amounted to FIM 475 million in 1998 (FIM 363 million in 1997). Prepaid expenses and accrued income mainly consist of VAT receivables and other accruals.

16. Valuation and qualifying accounts

	Balance at beginning of year	*Charged to cost and expenses*	*Charged to other accounts*	*Deductions*	*Balance at end of year*
	MFIM	*MFIM*	*MFIM*	*MFIM*	*MFIM*
Provisions from assets to which they apply:					
1998					
Allowance for doubtful notes and accounts receivable	135	331	—	(76)	390
Obsolescence provision	895	712	—	(749)	858
Valuation allowance	118	—	163	—	281
1997					
Allowance for doubtful notes and accounts receivable	198	62	—	(125)	135
Obsolescence provision	721	746	—	(572)	895
Valuation allowance	1,086	—	(968)	—	118
1996					
Allowance for doubtful notes and accounts receivable	155	85	—	(42)	198
Obsolescence provision	393	638	—	(310)	721
Valuation allowance	855	—	231	—	1,086

17. Shareholders' equity

	Share capital	*Share issue premium*	*Treasury shares*	*Other reserves*	*Retained earnings*	*Other compre-hensive income*	*Total*
	MFIM	*MFIM*	*MFIM*	*MFIM*	*MFIM*	*MFIM*	*MFIM*
Balance at December 31, 1995 ..	1,498	4,624	(470)	100	7,052	1,002	13,806
Dividend					(899)		(899)
Purchase of treasury shares ..			(187)				(187)
Translation differences						(123)	(123)
Other increase/decrease, net ..				(49)	114		65
Net profit					3,263		3,263
Balance at December 31, 1996 ..	1,498	4,624	(657)	51	9,530	879	15,925
Share issue	1	71					72
Dividend					(1,048)		(1,048)
Profit of sale of treasury shares..		81					81
Sale of treasury shares			3		3		6
Translation differences						205	205
Other increase/decrease, net ..				(41)	65		24
Net profit					6,259		6,259
Balance at December 31, 1997 ..	1,499	4,776	(654)	10	14,809	1,084	21,524
Share issue	15	629					644
Dividend					(2,249)		(2,249)
Translation differences						(3)	(3)
Other increase/decrease, net ..				(2)	57		55
Net profit					10,408		10,408
Balance at December 31, 1998 ..	1,514	5,405	(654)	8	23,025	1,081	30,379

Exchange differences that arose from loans and financial instruments hedging investments in foreign subsidiaries in 1998 amounted to FIM 85 million (FIM 11 million in 1997 and FIM 39 million in 1996) and were offset against the translation differences arising from consolidation.

In 1998 the cumulative translation differences on subsidiaries' post acquisition equity amounted to FIM 111 million (FIM 35 million in 1997 and FIM 248 million in 1996) and on acquired equity to FIM 980 million (FIM 975 million in 1997 and FIM 626 million in 1996).

Beginning in 1998 untaxed reserves (net of deferred taxes) are included as part of retained earnings. Prior to January 1, 1998, untaxed reserves were disclosed as a separate component of shareholders' equity. The 1996 and 1997 components of shareholders' equity have been restated to conform with the 1998 presentation.

Other comprehensive income includes translation differences of FIM 367 million (FIM 328 million in 1997 and FIM 256 million in 1996) that have been included within retained earnings in the balance sheet.

Distributable earnings

	MFIM
Retained earnings	23,025
Accumulated other comprehensive income	367
− Non-distributable items	(921)
Distributable earnings Dec. 31, 1998	22,471

Retained earnings under IAS and Finnish Accounting Standards (FAS) are substantially the same. Distributable earnings are calculated based on the Finnish legislation.

18. Long-term liabilities

Long-term loans are repayable as follows:

	Outstanding Dec. 31, 1998	*Repayment date beyond 5 years*	*Outstanding Dec. 31, 1997*
	MFIM	*MFIM*	*MFIM*
Bonds (see note 19)	854	424	995
Convertible bonds (see note 20)	4	—	4
Loans from financial institutions	529	2	314
Loans from pension insurance companies	30	30	27
Other long-term finance loans	113	111	8
Other long-term liabilities	899	899	295
	2,429	1,466	1,643

The long-term liabilities as of December 31, 1998 mature as follows:

	MFIM	
1999	361	12.9%
2000	533	19.2%
2001	280	10.0%
2002	—	—
2003	150	5.4%
Thereafter	1,466	52.5%
	2,790	

The currency mix of the Group long-term liabilities as at December 31, 1998

FIM	*GBP*	*DEM*	*Others*
32.8%	19.9%	17.4%	29.9%

The long-term loan portfolio includes a 11.375% fixed-rate loan with a face amount of 50 million British pounds sterling due in 2004. The loan is callable by the creditor with three-months notice. The Group does not anticipate a request for prepayment prior to the final maturity. Accordingly the loan has not been classified as a current liability at December 31, 1998.

The Group has committed credit facilities totaling USD 900 million and short-term uncommitted facilities. Committed credit facilities are intended for working capital requirements and general corporate purposes as well as for a back up of US and Euro Commercial Paper Programs. Commitment fees of the facilities vary from 0.075% to 0.10% per annum.

At December 31, 1998, no Group borrowings were collateralized by mortgages. Assets (principally securities) were pledged with a net book value of FIM 33 million.

At December 31, 1998 and 1997 the weighted average interest rate of loans from financial institutions was 5.7% and 6.5%, respectively. The loans are payable semi-annually through 2000.

19. Bonds

	Million	*Interest*	*1998*	*1997*
			MFIM	*MFIM*
1989-2004	50.0 GBP	11.375%	424	445
1993-2003	150.0 FIM	Helibor*	150	150
1996-1999	100.0 FIM	5.300%	—	100
1996-2001	300.0 FIM	7.000%	280	300
			854	995

* Helsinki Interbank Offered Rate

20. Convertible bonds

	Million	*Interest*	*1998*	*1997*
			MFIM	*MFIM*
Bonds issued with warrants				
1994-1999	0.07 FIM	2.000%	—	0.1
1995-2000	1.45 FIM	0.000%	1.5	1.5
1997-2000	2.38 FIM	0.000%	2.4	2.4
			3.9	4.0

21. Deferred taxes

	1998
	MFIM
Current assets:	
Intercompany profit in inventory	409
Other	560
	969
Non-current assets:	
Tax losses carried forward	385
Other	90
	475
Total deferred tax asset	1,444
Valuation allowance	(281)
Net deferred tax asset	1,163
Current liabilities:	(38)
Non-current liabilities:	
Untaxed reserves	(477)
Other	(7)
	(484)
Total deferred tax liability	(522)

Beginning in January 1, 1998 the Group adopted revised IAS 12, Income taxes. The cumulative prior year net effect (FIM 416 million) has been included in the cumulative prior year net effect of change in accounting policies in the consolidated profit and loss account for 1998. See note 1. Accounting principles.

Deferred income tax liabilities have not been established for withholding tax and other taxes that would be payable on the unremitted earnings of certain subsidiaries, as such earnings are permanently reinvested.

At December 31, 1998 the Group had loss carryforwards of FIM 665 million for which no deferred tax asset was recognized due to uncertainty of utilization of these losses. The majority of these losses have no expiry date.

22. Accounts payable and accrued liabilities

Accounts payable and accrued liabilities consist of the following at December 31:

	1998	1997
	MFIM	MFIM
Accounts payable	8,070	4,865
Accrued expenses and prepaid income	13,426	9,676
	21,496	14,541

Accrued expenses and prepaid income mainly consist of VAT liabilities, personnel expenses,discounts and other accruals.

23. Short-term borrowings

Short-term borrowings consist primarily of borrowings from banks. The weighted average interest rate at December 31, 1998, 1997 and 1996 is 6.4%, 7.2% and 5.7%, respectively. The weighted average interest rate of short-term borrowings derived from different foreign currency denominated loan amounts.

24. The shares of the Parent company

Nokia has two classes of shares, A shares and K shares. At General Meetings, each K share is entitled to ten (10) votes and each A share to one (1) vote. The A shares are entitled to a fixed annual dividend of 10 per cent of the nominal value before the K shares are entitled to receive dividends. Should it be impossible in any year to distribute such dividend, the A shares are entitled to receive the remainder in the following year before any dividend can be distributed on the K shares. Should a dividend higher than 10 per cent of the nominal value be distributed on the K shares, a supplementary dividend is distributed on the A shares so that the dividend will be of equal size for both share classes.

The shareholders of Nokia resolved at the Annual General Meeting held on March 24, 1998 to split the nominal value of each class of Nokia shares on a two-for-one basis. With effect from April 16, 1998 the nominal value was reduced from FIM 5 to FIM 2.50. All share information presented has been restated to give effect to the share split.

The minimum share capital stipulated in the Articles of Association is FIM 957 million and the maximum share capital FIM 3,828 million. The share capital may be increased or reduced within these limits without amending the Articles of Association. On December 31, 1998 the share capital of the Parent Company was FIM 1,513,991,410 and the total number of votes 1,748,873,269.

The Articles of Association contain a provision permitting the holders of K shares or, with regard to shares registered in the name of a nominee, the custodian registered as administrator of such shares in a book-entry register, to convert their shares to an equivalent number of A shares, within the limits set for the minimum and maximum numbers of shares in each class of shares. By December 31, 1998, a total of 201,755,383 K shares had been converted into A shares.

The shares of the Parent Company are distributed into K shares and A shares as follows at December 31, 1998:

	units	*FIM each*	*FIM*
K shares	127,030,745	2.50	317,576,862.50
A shares	478,565,819	2.50	1,196,414,547.50
Total	605,596,564	2.50	1,513,991,410.00

On December 31, 1998 shares included 32,161,000 shares owned by the Group companies of which 27,626,768 were K shares and 4,534,232 A shares with an aggregate nominal value of FIM 80,402,500. The shares represent 5.3 per cent of the total number of shares and 16.1 per cent of the total number of voting rights.

At the end of 1998, the Board of Directors had no unused authorizations to issue shares, convertible bonds or bonds with warrants.

The Annual General Meeting held on April 7, 1994 approved the issue of up to 200 bonds bearing interest at 2 per cent with warrants due April 15, 1999, for up to an aggregate principal amount of FIM 200,000 to certain members of Nokia's management (Nokia Stock Option Plan 1994). Each bond has a principal amount of FIM 1,000 and carries 1,000 warrants, each of which is exercisable at FIM 374 for eight A shares from December 1, 1998 to January 31, 2000. The bonds were issued on April 15, 1994. If exercised in full, the warrants would be exercisable for a total of 1,600,000 A shares, whereby the share capital would be increased by a maximum amount of FIM 4,000,000 representing less than one per cent of the outstanding share capital of Nokia. The stock option plan covers approximately 50 persons who are entitled to purchase a maximum average number of 32,000 shares.

The Annual General Meeting held on March 30, 1995 approved the issue of up to 1,450 non-interest bearing bonds with warrants due May 31, 2000, for up to an aggregate principal amount of FIM 1,450,000 to certain members of the management of the Nokia Group (Nokia Stock Option Plan 1995). Each bond has a principal amount of FIM 1,000 and carries 2,000 A warrants and 2,000 B warrants. Each A warrant confers the right to subscribe for two A shares during the period from December 1, 1997 to January 31, 2001, and each B warrant during the period from December 1, 1999 to January 31, 2001, respectively. The bonds were issued on May 31, 1995. If exercised in full, the warrants would be exercisable for a total of 11,600,000 A shares, whereby the share capital would be increased by a maximum amount of FIM 29,000,000 representing approximately 1.9 per cent of the outstanding share capital of Nokia. The subscription price for two A shares is FIM 168. The stock option plan covers approximately 350 persons who are entitled to purchase a maximum average number of 33,200 shares.

The Annual General Meeting held on March 25, 1997 approved the issue of up to 4,750 non-interest bearing bonds with warrants due April 16, 2000, for up to an aggregate principal amount of FIM 2,375,000 to key personnel of the Nokia Group (Nokia Stock Option Plan 1997). Each bond has a principal amount of FIM 500 and carries 500 A warrants, 500 B warrants and 1,000 C warrants. Each warrant confers the right to subscribe for two A shares. The A warrants may be exercised from December 1, 1997 to January 31, 2003, the B warrants from November 1, 1999 to January 31, 2003 and the C warrants from November 1, 2001 to January 31, 2003. The bonds were issued on April 16, 1997. If exercised in full, the warrants would be exercisable for a total of 19,000,000 A shares whereby the share capital would be increased by a maximum amount of FIM 47,500,000 representing approximately 3.1 per cent of the outstanding share capital of Nokia and 0.9 per cent of votes. The subscription price for two A shares is FIM 307. The stock option plan covers approximately 2,000 persons who are entitled to purchase a maximum average number of 9,500 shares.

Shares subscribed under the bonds will qualify for dividends for the financial year in which subscription occurs. Other shareholder rights will commence on the date on which the share subscription is entered in the Finnish Trade Register.

Pursuant to the warrants issued an aggregate maximum number of 26,307,748 new A shares may be subscribed for representing 1.5 per cent of votes. During the year 1998, the exercise of 2,933,562 warrants attached to the bonds resulted in the issue of 5,892,252 new A shares and the increase of share capital of the Parent Company with FIM 14,730,630.

There were no other bonds with warrants and no convertible bonds outstanding during the year 1998.

Information relating to stock warrants during 1998, 1997 and 1996 is as follows:

	Number of shares
Shares under option at December 31, 1995	11,603,264
Granted	240,000
Exercised	—
Forfeited	726,400
Shares under option at December 31, 1996	11,116,864
Granted	17,318,000
Exercised	604,352
Forfeited	208,400
Shares under option at December 31, 1997	27,622,112
Granted	541,650
Exercised	5,892,252
Forfeited	416,750
Shares under option at December 31, 1998	21,854,760
Warrants exercisable at December 31, 1998 (shares)	7,837,875
Warrants exercisable at December 31, 1997 (shares)	8,802,428
Warrants exercisable at December 31, 1996 (shares)	—

Stock warrants outstanding at December 31, 1998

	Nokia Stock Option Plan		
	1994	*1995*	*1997*
Exercise prices (FIM)	46.75	84.00	153.50
Warrants outstanding at December 31, 1998 (shares)	1,529,696	4,907,650	15,417,414
Remaining life (years)	1.1	2.1	3.1
Warrants exercisable at December 31, 1998 (shares)	1,529,696	2,453,825	3,854,354

In connection with the acquisition of Ipsilon, as described in Note 6, Nokia assumed Ipsilon's 1995 stock option plan (Ipsilon Plan). Under the terms of the Ipsilon Plan and at the discretion of the board of directors of Ipsilon, incentive options may be granted to employees, and nonstatutory options may be granted to employees, directors and consultants, at prices that are no less than 100% and 85%, respectively, of the fair market value of Nokia's American Depositary Receipts (ADSs) at the date of grant. For former 10% shareholders of Ipsilon, options may be granted at prices that are not less than 110% of the fair market value of the ADSs at the date of grant. Options granted under the Ipsilon Plan generally become exercisable immediately and vest at 25% upon completion of one year from the vesting commencement date and ratably 1/48 each month thereafter. The options expire ten years from the date of grant.

At December 31, 1998, 349,129 options to purchase 349,129 ADSs were outstanding. All of the options are exercisable at December 31, 1998. The maximum aggregate number of ADSs that may be issued is 420,658.

	Number of shares
Shares under option at December 31, 1997	372,314
Granted	77,700
Exercised	46,737
Forfeited	54,148
Shares under option at December 31, 1998	349,129

The options outstanding by range of exercise prices at December 31, 1998 are as follows:

Options outstanding				*Vested options outstanding*	
Exercise prices (USD)	*Number of options*	*Weighted average remaining contractual life in years*	*Weighted average exercise price (USD)*	*Number of options*	*Weighted average exercise price (USD)*
0.59 – 11.68	271,429	8.4	9.48	75,282	8.67
63.25 – 92.19	69,700	9.5	73.72	—	—
100.88	8,000	9.9	100.88	—	—

25. Earnings per share

		1998	*1997*	*1996*
Numerator (MFIM)				
Basic/Diluted:	Net profit	10,408	6,259	3,263
Denominator/1,000 shares				
Basic:	Weighted average shares	569,170	566,564	567,122
	Effect of dilutive securities: warrants	17,480	10,019	
Diluted:	Adjusted weighted average shares and assumed conversions	586,650	576,583	

26. Commitments and contingencies

	1998	1997
	MFIM	MFIM
Mortgage backed liabilities		
Loans from financial institutions	—	19
Mortgages	—	19
Collateral for own commitments		
Mortgages	34	34
Assets pledged*	53	104
Collateral given on behalf of Group companies		
Mortgages	1	1
Assets pledged*	—	4
Collateral given on behalf of other companies		
Mortgages	3	3
Pension liabilities not booked as expenses or liabilities	1	2
Contingent liabilities on behalf of Group companies		
Other guarantees	1,683	1,198
Contingent liabilities on behalf of associated companies		
Guarantees for loans	4	6
Contingent liabilities on behalf of other companies		
Guarantees for loans	498	341
Other guarantees	2	—

* Assets pledged include inventories, securities and receivables.

There is no market for those guarantees and they were issued without explicit cost; therefore, it is not practicable to establish fair value of such instruments.

27. Leasing contracts

The Group leases office, manufacturing and warehouse space under various non-cancellable operating leases. Certain contracts contain renewal options for various periods of time.

The future costs for finance lease contracts exceeding one year and for non-cancellable leasing contracts are as follows:

	Finance lease	Operating lease
	MFIM	MFIM
Leasing payments		
1999	10	567
2000	6	480
2001	3	420
2002	—	351
2003	—	282
and thereafter	—	634
Total	19	2,734

Rental expense amounted to FIM 629 million, FIM 533 million and FIM 576 million in 1998, 1997 and 1996, respectively.

28. Related parties

The Group recorded net rental expense of FIM 17 million in 1998, FIM 15 million in 1997 and FIM 11 million in 1996 pertaining to a sale-leaseback transaction with the pension fund involving certain buildings and a lease of the underlying land.

At December 31, 1998, the pension fund held 0.3% of the share capital of Nokia Corporation.

Loans granted to senior management amounted to FIM 3 million at December 31, 1998 and FIM 3 million at December 31, 1997. The loan period is generally between 5 and 10 years. The interest rates vary between 3-8% depending on the level of interest rate in the respective country.

29. Associated companies

	1998	*1997*	*1996*
	MFIM	*MFIM*	*MFIM*
Share of results of associated companies	38	54	37
Dividend income	14	16	18
Share of shareholders' equity of associated companies	540	310	344
Receivables from associated companies			
Current receivables	1	68	201
Short-term loan receivables	—	—	10
Liabilities to associated companies			
Current liabilities	1	2	77

30. Notes to cash flow statement

	1998	*1997*	*1996*
	MFIM	*MFIM*	*MFIM*
Adjustments for:			
Depreciation and amortization	3,028	2,762	2,236
Other operating income and expenses	(51)	(210)	(27)
Adjustments, total	2,977	2,552	2,209
Change in net working capital			
Short-term trade receivables, (increase), decrease	(9,353)	(1,616)	(917)
Inventories, (increase), decrease	(614)	(718)	3,113
Interest-free short-term liabilities, increase, (decrease)	7,286	3,211	797
Change in net working capital	(2,681)	877	2,993

31. Financial risk management

The continuously evolving financial and business environment creates a challenge for Nokia's Treasury function. The overall objective of Nokia's Treasury is to identify, evaluate and hedge financial risks in close co-operation with the business groups. The international organization of Nokia's Treasury enables the company to provide Group companies with financial services according to local needs and requirements. This process involves utilizing global financial markets. Treasury aims at minimizing the adverse effects caused by fluctuations in the financial markets on the profitability of the underlying businesses and thus on the financial performance of Nokia. Furthermore, the Treasury function aims at minimizing the number of external treasury transactions required at Group level.

Treasury operations are controlled by policies approved by the top management. Treasury Policy provides principles for overall financial risk management in Nokia. Operating Policies cover specific areas such as foreign exchange risk, interest rate risk, use of derivative financial instruments and investing excess liquidity. Business Groups have detailed Standard Operating Procedures covering for example foreign exchange exposure management. Nokia does not hold derivatives for trading purposes.

Market risk

Foreign exchange risk

Nokia operates globally and is thus exposed to foreign exchange risk arising from various currency combinations. Foreign currency denominated assets and liabilities together with firm and probable purchase and sale commitments give rise to foreign exchange exposure. Foreign exchange exposures are managed against various local currencies, since Nokia has an increasing amount of production and sales outside Finland. Due to the rapid growth in the Group, currency combinations may also change within the financial year. The principal transaction exposure in 1998 was against Finnish markka, since a significant proportion of production and personnel expenses is incurred in Finland, whilst only approximately 3% of the turnover was denominated in Finnish markka. The most significant sales currencies were USD, DEM and GBP. In general, the appreciation of the base currency of Nokia relative to other currencies has an adverse effect on Nokia's sales and operating profit in the medium to long term, while depreciation of the base currency has a positive effect in the medium to long term.

According to the foreign exchange policy guidelines of the Group, material open foreign exchange exposures are hedged. 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.

Nokia uses Value-at-Risk methodology (VaR) to assess the foreign exchange risk. The VaR figure represents the potential losses for a portfolio from adverse changes in market factors, for a specified time period and confidence level based on historical data. Historical volatilities and correlations are calculated over the preceding year and Monte Carlo simulation is used, which takes into account the non-linear value changes of certain derivative instruments.

Since Nokia has subsidiaries outside Finland, the Finnish markka denominated value of the equity of Nokia is also exposed to fluctuations in exchange rates. The equity changes caused by movements in foreign exchange rates are shown as a translation difference in the Group consolidation. Nokia uses foreign exchange contracts and foreign currency denominated loans to hedge its equity exposure arising from foreign net investments. Exchange gains and losses resulting from the hedging transactions are offset against the translation differences arising from consolidation and are recorded in shareholders' equity. The Board of Directors provides the framework for hedging decisions. Actual decisions on the currency pairs to be hedged are supported by portfolio theory based quantitative methods. Foreign exchange translation risks is also measured by probability based Value-at-Risk methodology.

Interest rate risk

The Group is exposed to interest rate risk either through market value fluctuations of balance sheet items i.e. price risk or changes in the interest expenses or revenues i.e. re-investment risk. Interest rate risk mainly arises through interest-bearing liabilities and assets. Estimated future changes in cash flows and balance sheet structure also expose the Group to interest rate risk. Group companies are responsible for managing their short term interest rate exposure. Long term interest rate exposure of the Group is monitored and managed by Corporate Treasury. Due to the current balance sheet structure of Nokia, emphasis is placed on managing the interest rate risk of investments.

The Group hedges its interest rate exposure by using derivative financial instruments, such as interest rate swaps, forward and options. The maturities of interest rate swaps are usually less than five years. Interest rate risk is managed by using duration based sensitivity analysis and by constantly monitoring the market value of the financial instruments. Investment portfolios are benchmarked against market rates in order to facilitate internal performance measurement.

Equity price risk

Nokia has some investments in publicly traded companies. The market value of the equity investments at December 31, 1998 was FIM 739 million (FIM 438 million in 1997). Currently there are no outstanding derivative financial instruments designated as hedges of these equity investments.

Credit risk

Financial instruments contain an element of risk that the counterparties may be unable to meet the terms of the agreements. However, the Group minimizes this risk by limiting its counterparties to major banks and financial institutions.

Direct credit risk represents the risk of loss resulting from counterparty default in relation to on-balance sheet products. The fixed income and money market investments are made based on high credit quality. The outstanding investments are also constantly monitored by treasury management. Treasury management does not expect the counterparties to default given their high credit ratings.

Vendor financing has become increasingly important means of competing in the international trade of telecommunication networks during the past years. Nokia has maintained conservative financing policy in this area and aimed at close cooperation with banks and financial institutions to support clients in their financing of infrastructure investments. The outstanding liabilities on long-term customer financing were December 31, 1998 FIM 1,537 million out of which FIM 1,057 million were receivables and FIM 480 million contingent liabilities. Risks related to long term customer receivables are systematically monitored and no credit losses have occurred.

Liquidity risk

One of the main objectives of the Treasury function is to guarantee that the liquidity of the company remains sufficient. This objective calls for efficient cash management, liquidity of investments and prudent investment policy. The fixed income and money market investments made by Nokia are liquid.

Due to the dynamic nature of the underlying business Group Treasury aims at maintaining flexibility in funding by keeping committed and uncommitted credit lines available. Nokia's international creditworthiness facilitates the efficient use of international capital and loan markets. Standard and Poor's credit rating agency raised the long rating of Nokia to A in 1998.

The most significant existing funding programs include:

- Local commercial paper programs in Finland, totalling FIM 1,100 million
- Euro Commercial Paper (ECP) — program, totalling USD 500 million
- US Commercial Paper (USCP) — program, totalling USD 500 million
- Revolving Credit Facility of USD 350 million, matures in 2004
- Revolving Credit Facility of USD 500 million, matures in 2003

None of the above programs has been used to a significant degree in 1998.

Notional amounts of derivative financial instruments [1]

	1998	1997
	MFIM	MFIM
Foreign exchange forward contracts [2][3]	92,979	57,228
Currency options bought	4,405	7,945
Currency options sold	5,210	8,299
Interest rate forward and futures contracts [2]	—	5,695
Interest rate swaps	400	575
Interest rate options bought	—	187

(1) The notional amounts of derivatives summarized here do not represent amounts exchanged by the parties and, thus are not a measure of the exposure of Nokia caused by its use of derivatives.

(2) Notional amounts outstanding include positions, which have been closed off.

(3) As at December 31, 1998 notional amount includes contracts amounting to FIM 7.9 billion used to hedge the shareholders' equity of foreign subsidiaries (December 31, 1997 FIM 5.2 billion).

32. Fair value of financial instruments

The following table presents the carrying amounts and fair values of the Group's financial instruments outstanding at December 31, 1998 and 1997. The carrying amounts in the table are included in the balance sheet under the indicated captions, except for derivatives, which are included in accounts receivable and accounts payable and accrued liabilities. The fair value of a financial instrument is defined as the amount at which the instrument could be exchanged in a current transaction between willing parties, other than in a forced or liquidation sale.

	1998		1997	
	Carrying amount	Fair value	Carrying amount	Fair value
	MFIM	MFIM	MFIM	MFIM
Financial assets				
Cash and cash equivalents	17,188	17,277	12,247	12,260
Receivables	17,691	17,691	10,637	10,637
Investments in other shares	445	885	453	548
Other non-current assets	202	202	195	195
Financial liabilities				
Accounts payable	7,831	7,831	5,188	5,188
Short-term borrowings	4,158	4,158	3,008	3,008
Long-term interest-bearing liabilities	1,530	1,683	1,348	1,473
Off-balance-sheet instruments				
Currency options purchased [1][2]	133	133	41	41
Currency options written [2]	(95)	(95)	(45)	(45)
Forward foreign exchange contracts [1][2]	875	875	(152)	(152)
Interest rate swaps [3]	7	33	10	30
Interest rate FRA's and futures	—	—	—	2

(1) The carrying amount and fair value of forward foreign exchange contracts and currency options include unrealized gains and losses relating to hedges of firm and anticipated commitments, which have been deferred.

(2) Forward foreign exchange contracts and currency options used to hedge the shareholders' equity of foreign subsidiaries are not included.

(3) The carrying amount of interest rate swaps includes accrued interest.

Estimation of fair values

Receivables, accounts payable, short-term borrowings

The carrying amounts are a reasonable estimate of the fair values because of the short maturity of such instruments.

Cash and cash equivalents, investments and other non-current assets

The carrying amounts of cash and certain other financial assets approximate fair values. The fair value of publicly traded instruments is based on quoted market values. All other instruments have been valued using discounted cash flow analyses.

Long-term interest-bearing liabilities

The fair value of fixed rate and market-based floating rate long-term debt is estimated using the expected future payments discounted at market interest rates. The carrying amount of non-market based floating rate long-term loans, including pension loans, approximates fair value.

Currency option and forward foreign exchange contracts

The carrying amounts of currency option contracts and forward foreign exchange contracts are based on quoted market rates at year-end balance sheet dates. Therefore, the carrying amounts approximate fair value.

Interest rate and currency swaps

Fair value of swap instruments have been estimated by using discounted cash flow analyses.

Forward rate agreements, interest rate option and futures contracts

Fair value of FRA's, interest rate option and futures contracts have been estimated based on quoted market rates at year-end balance sheet dates.

33. Principal Nokia Group companies on December 31, 1998

	Net sales	*Number of shares*	*Group majority*	*Total nominal value in 1,000 units*	*Book value*
	MFIM		*%*		*FIM 1,000*
Nokia Telecommunications					
FI Nokia Telecommunications Oy	18,319	226,000	100.0	226,000 FIM	376,000
GB Nokia Telecommunications Ltd	4,429	20,000,000	100.0	20,000 GBP	169,700
CN Beijing Nokia Mobile Telecommunications Ltd	4,033	2	50.0	10,000 USD	44,992
Nokia Mobile Phones					
FI Nokia Matkapuhelimet Oy	28,560	665	100.0	33,250 FIM	106,704
US Nokia Mobile Phones Inc.	15,210	1,300	100.0	1 USD	760,387
DE Nokia Mobile Phones Produktionsgesellschaft mbH	8,037	2	100.0	90 DEM	274
KR Nokia TMC Limited	5,449	232,080	100.0	2,320,800 KRW	164,703
Other Operations					
FI Nokia Display Products Oy	3,060	30,000	100.0	30,000 FIM	30,000
SE Nokia Satellite Systems AB	1,541	1,103	100.0	1,103 SEK	186,233
HU Nokia Monitor Magyarorzag KFT ..	1,076		100.0		11,099
FI Salcomp Oy	832	47,653	100.0	47,653 FIM	49,208
NL Nokia Finance International B.V... ..		229	100.0	229 NLG	1,119,197

Shares in other listed companies

Group holding more than 5%

	Group holding %	*Group voting %*
Nextrom Holding S.A.	25.0	50.0
Nokian Tyres plc	24.2	24.2
Filtronic plc	7.5	7.5
Geoworks Inc.	6.2	6.2

A complete list of all shareholdings is included in Nokia's Statutory Accounts.

34. Subsequent events

At Nokia's Annual General Meeting on March 17, 1999 the shareholders passed resolutions to:

- convert the share capital of the company and the nominal value of its shares into euros,
- effect a two-for-one share split
- make a bonus issue in the form of a transfer of EUR 36,051,275 (FIM 214,351,146) from the share premium fund to share capital
- issue 36,000,000 stock options to key personnel
- authorize the Board of Directors to decide on an increase of the share capital by a maximum of EUR 28,800,000 (120,000,000 new Shares) within a year
- consolidate the Company's A and K shares.
- amend the terms and conditions of the stock option plans for 1994, 1995 and 1997 to reflect the two-for-one stock split effective as of April 9, 1999 and the bonus issue.

In February 1999 Nokia acquired Diamond Lane Communications Corporation for approximately USD 125 million in cash. Diamond Lane Communications Corporation, based in Petaluma, California, is one of the first companies in the world to commercially offer digital subscriber line data access.

In February 1999 Nokia also signed an agreement to acquire InTalk Corporation, a privately-owned U.S.-based company which focuses on the development of wireless LAN access point products.

35. Differences between International Accounting Standards and U.S. Generally Accepted Accounting Principles

The Group's consolidated financial statements are prepared in accordance with International Accounting Standards, which differ in certain respects from accounting principles generally accepted in the United States (U.S. GAAP).

The principal differences between IAS and U.S. GAAP are presented below together with explanations of certain adjustments that affect consolidated net income and total shareholders' equity as of and for the years ended December 31:

	1998	*1997*	*1996*
	MFIM	*MFIM*	*MFIM*
Reconciliation of net income:			
Net income reported under IAS	10,408	6,259	3,263
U.S. GAAP adjustments:			
Deferred income taxes	—	174	(129)
Pension expense	96	144	(19)
Development costs	(109)	(180)	32
Marketable securities	172	—	—
Sale-leaseback transactions	4	4	4
Other adjustments	—	—	235
Deferred tax effect of U.S. GAAP adjustments	(110)	(5)	(84)
Net income under U.S. GAAP	10,461	6,396	3,302
Presentation of income and comprehensive income under U.S. GAAP:			
Income from continuing operations	10,461	6,135	2,954
Discontinued operations:			
Profit from operations, net of income tax of FIM 14 million in 1996	—	—	41
Gain on disposal, net of income tax of FIM 124 million in 1996	—	261	307
Income from discontinued operations	—	261	348
Net income	10,461	6,396	3,302
Other comprehensive income net of tax:			
Foreign currency translation adjustment	(3)	205	(123)
Unrealized gains on securities:			
Unrealized holding gains during the year	247	41	108
Less: Reclassification adjustment for gains included in income	(2)	(15)	1
Other comprehensive income	242	231	(14)
Comprehensive income	10,703	6,627	3,288
Reconciliation of shareholders' equity:			
Total shareholders' equity reported under IAS	30,379	21,524	
U.S. GAAP adjustments:			
Deferred income taxes	—	416	
Pension expense	269	173	
Development costs	(824)	(715)	
Marketable securities	530	114	
Sale-leaseback transactions	(24)	(28)	
Deferred tax effect of U.S. GAAP adjustments	8	118	
Total shareholders' equity under U.S. GAAP	30,338	21,602	

Earnings per share under U.S. GAAP

As described in Note 24, Nokia's A shares participate equally with K shares in the earnings of the Group. Accordingly, under U.S. GAAP, earnings per share would be computed using the two-class common stock method based on the weighted average number of K shares and A shares outstanding, and would be presented for continuing operations, discontinued operations and net income.

Earnings per share amounts after giving retroactive effect to the 2-for-1 stock split, are presented below:

		1998	1997	1996
		FIM	*FIM*	*FIM*
Earnings per A shares and K shares:				
Basic:	Continuing operations	17.65	10.83	5.21
	Discontinued operations	—	0.46	0.61
	The cumulative effect of change in accounting policies	0.73	—	—
	Net income	18.38	11.29	5.82
Diluted:	Continuing operations	17.12	10.64	5.19
	Discontinued operations	—	0.45	0.61
	The cumulative effect of change in accounting policies	0.71	—	—
	Net income	17.83	11.09	5.80

Deferred income taxes

Beginning January 1, 1998 the Group has accounted for deferred income taxes under IAS using the liability method. The differences between the application of IAS and U.S. GAAP are insignificant in relation to Nokia's deferred tax balance.

Prior to January 1, 1998, under IAS, deferred income taxes were not provided for differences between taxable income and accounting income that were not expected to reverse for some considerable period of time. U.S. GAAP requires recognition of deferred income taxes on a comprehensive basis for all temporary differences. Under this method, deferred tax liabilities and assets are determined based on the difference between the financial statement and tax bases of assets and liabilities using enacted tax rates in effect at year-end. Deferred tax assets are also recognized on net operating loss carryforwards, reduced by a valuation allowance where it is more likely than not that the asset will not be realized.

The components of net deferred tax asset under U.S. GAAP are as follows at December 31, 1997:

	1997
	MFIM
Current assets:	
Intercompany profit in inventory	338
Other	139
	477
Noncurrent assets:	
Tax losses carried forward	533
Property, plant and equipment	36
Other	12
Valuation allowance	(118)
	463
Noncurrent liabilities:	
Untaxed reserves	(484)
Other	(40)
	(524)
Deferred tax asset	416
Deferred tax effect of U.S. GAAP adjustments	118
Net deferred tax asset under U.S. GAAP	534

Development costs

Development costs have been capitalized after the product involved has reached a certain degree of technical feasibility. Capitalization ceases and depreciation begins when the product becomes available to customers. The depreciation period of these capitalized assets is from two to five years.

Under U.S. GAAP software development costs would similarly be capitalized after the product has reached a certain degree of technical feasibility. However, certain non-software related development costs capitalized under IAS would not be capitalizable under U.S. GAAP and therefore would have been expensed.

Sale-leaseback transactions

Under IAS, the Group recorded a gain from a transaction involving the sale of property and equipment and has recorded rental expense associated with the subsequent leaseback of such property and equipment.

Under U.S. GAAP, the sale-leaseback transaction would be treated as financing. Accordingly, until the gain is realized through sale of the property and equipment, the gain would be reversed and the proceeds from the sale would be treated as an obligation. Rental payment would be applied to interest expense on the obligation as well as to reducing the principal amount of the obligation. At December 31, 1998 and 1997, the obligation for such financing would increase long-term debt by FIM 56 million and FIM 64 million, respectively, and the current portion of long-term debt would increase by FIM 8 million at December 31, 1998 and 1997. Depreciation would continue to be expensed as if the assets had never been sold. At December 31, 1998 and 1997, the impact of reversing the sale of fixed assets would increase property, plant and equipment by FIM 36 million and FIM 40 million, respectively.

Marketable securities

Under IAS, marketable securities for which it is management's intent to sell within the current operating cycle are marked to market value; otherwise such securities are carried at cost. The unrealized gain or loss recognized in connection with these securities that have been marked to market is charged to the profit and loss statement.

Under U.S. GAAP, the Group's marketable securities would be classified as available for sale and carried at aggregate fair value with gross unrealized holding gains and losses reported as a separate component of shareholders' equity. Any unrealized losses recognized under IAS would be reversed under U.S. GAAP.

Other adjustments

There are also differences between IAS and U.S. GAAP in relation to nonmonetary transactions, goodwill and restructuring charges. None of these differences are individually material and they are therefore shown as a combined total.

Disclosures required by US GAAP

Dependence on limited sources of supply

Nokia's manufacturing operations depend upon obtaining adequate supplies of raw materials on a timely basis. Nokia's principal raw materials are electronic components, such as semiconductors, microprocessors, microcontrollers and memory devices, which have a wide range of applications in the Group's telecommunications products. In addition Nokia has outsourced some of its manufacturing to third parties. From time to time, suppliers may extend lead times, limit supplies or increase prices due to capacity constraints or other factors. The Group's results of operations would be adversely affected if it were unable to obtain adequate supplies of raw materials or outsourced products in a timely manner or if there were significant increases in the related costs.

Segment information

In 1998, Nokia adopted SFAS 131. Nokia's reportable segments are: Nokia Telecommunications, Nokia Mobile Phones and Other Operations. Nokia's reportable segments are strategic business units that offer different products and services for which monthly financial information is provided to the Board.

Nokia Telecommunications develops and manufactures infrastructure equipment for fixed, mobile and datacom networks. It is a supplier of GSM infrastructure, including wireless data solutions. In addition, Nokia Telecommunications is a significant supplier of advanced access, switching, IP network and IN solutions for fixed and mobile telecom operators and Internet service providers, supported by global customer service network.

Nokia Mobile Phones manufactures a complete range of cellular phones for all major digital and analog standards worldwide.

Other Operations comprises Nokia Communications Products, Nokia Ventures Organization, Nokia Research Center and general Group functions. Nokia Communication Products comprises Nokia Multimedia Terminals and Nokia Industrial Electronics.

The accounting policies of the segments are the same as those described in the "Accounting Principles". Nokia accounts for intersegment revenues and transfers as if the revenues or transfers were to third parties, that is, at current market prices. Nokia evaluates the performance of its segments and allocates resources to them based on operating profit.

No single customer represents 10% or more of the Group revenues.

The table below presents information about reported segments for the years ending December 31:

	Telecommunications	*Mobile Phones*	*Other Operations*	*Total Reportable Segment*	*Eliminations*	*Group*
1998						
Income Statement Information						
Net sales to external customers	26,069	47,866	5,296	79,231		79,231
Net sales to other segments	34	118	733	885	(885)	0
Depreciation and amortization	1,231	1,564	233	3,028		3,028
Operating profit	5,706	9,158	(65)	14,799		14,799
Share of result of associated companies	(1)	(7)	46	38		38
Balance Sheet Information						
Capital additions to long lived assets	1,175	2,616	295	4,086		4,086
Segment assets (1)	17,482	17,507	8,530	43,519	(4,196)	39,323
of which:						
Investments in associated companies	6	238	295	539		539
1997						
Income Statement Information						
Net sales to external customers	18,810	27,379	6,423	52,612		52,612
Net sales to other segments	15	264	816	1,095	(1,095)	0
Depreciation and amortization	1,275	1,190	297	2,762		2,762
Operating profit	4,053	3,837	564	8,454		8,454
Share of result of associated companies	0	0	54	54		54
Balance Sheet Information						
Capital additions to long lived assets	877	818	413	2,108		2,108
Segment assets (1)	13,325	10,197	5,910	29,432	(1,343)	28,089
of which:						
Investments in associated companies	3	2	330	335		335
1996						
Income Statement Information						
Net sales to external customers	13,328	21,445	4,548	39,321		39,321
Net sales to other segments	4	134	650	788	(788)	0
Depreciation and amortization	806	1,211	219	2,236		2,236
Operating profit	2,982	1,431	(147)	4,266		4,266
Share of result of associated companies	1	(5)	41	37		37
Balance Sheet Information						
Capital additions to long lived assets	723	564	564	1,851		1,851
Segment assets (1)	9,383	9,806	5,609	24,798	(814)	23,984
of which:						
Investments in associated companies	40	20	354	414		414

(1) Comprise intangible assets, property, plant and equipment, investments, inventories and accounts receivable as well as prepaid expenses and accrued income except those related to interest and taxes.

Net sales (by location of customer) and long-lived asset information by geographic area as of and for the years ended December 31:

	Finland	*USA*	*China*	*UK*	*Germany*	*Other*	*Group*
Net sales to external customers							
1998	2,763	11,867	10,421	7,170	6,749	40,261	79,231
1997	2,557	6,628	6,290	6,296	4,308	26,533	52,612
1996	2,440	4,876	2,391	4,071	4,212	21,331	39,321
Long lived assets by location of assets (1)							
1998	3,825	928	497	803	907	952	7,912
1997	3,548	635	179	750	492	636	6,240
1996	3,450	386	51	638	567	570	5,662

(1) Includes property, plant and equipment.

Compensation expense

As described in Note 24, in 1994, 1995 and 1997 Nokia approved the issue of bonds with warrants to certain members of management as part of incentive schemes for management. As allowed by FAS 123, under U.S. GAAP the Group has elected to continue to apply APB Opinion 25 and related interpretations in accounting for its schemes. Since the exercise price of each warrant equals the market price of Nokia's share on the date of grant, no compensation cost is recognized. Had compensation cost for the 1995 and 1997 management incentive scheme been determined based on the fair value at the grant dates for warrants under that scheme consistent with the method prescribed in FAS 123, the Group's net income and earnings per share would have been reduced to the pro forma amounts indicated below:

		1998	*1997*	*1996*
		MFIM	*MFIM*	*MFIM*
Net income:	As reported	10,461	6,396	3,302
	Pro forma	10,262	5,970	3,179
Basic earnings per share	As reported	18.38	11.29	5.82
	Pro forma	18.03	10.54	5.61

Under FAS 123, pro forma disclosures are only required in relation to awards granted after January 1, 1995. The fair value of the warrants is estimated on the date of grant using the binomial option-pricing model with the following assumptions: dividend yield of 1.23 per cent for 1995 warrants and 1.16 per cent for 1997 warrants; expected volatility of 30 per cent for 1995 warrants and 35 per cent for 1997 warrants, risk-free interest rate of 9.57 per cent for 1995 warrants and 5.83 per cent for 1997 warrants and expected life of approximately 5.5 years for 1995 warrants and 4.3 years for 1997 warrants.

Pension expense

Under IAS, the determination of pension expense for defined benefit plans differs from the methodology set forth in U.S. GAAP. For purposes of U.S. GAAP, the Group has estimated the effect on net income and shareholders' equity assuming the application of SFAS No. 87 in calculating pension expense as of January 1, 1992.

For its single-employer defined benefit pension schemes, net periodic pension cost included in the Group's U.S. GAAP net income for the years ended December 31, 1998, 1997 and 1996, includes the following components.

	1998	*1997*	*1996*
	MFIM	*MFIM*	*MFIM*
Service cost — benefits earned during the year*	590	445	358
Interest on projected benefit obligation	125	110	141
Expected return on assets	(157)	(145)	(168)
Amortization of prior service cost	(23)	(12)	8
Recognized net actuarial loss	(9)	(14)	(24)
Amortization of transition asset	11	11	11
Net periodic pension cost	537	395	326

* Includes premiums associated with pooled benefits.

The following table sets forth the changes in the benefit obligation and fair value of plan assets during the year and the funded status of the significant defined benefit pension plans showing the amounts that would be recognized in the Group's consolidated balance sheet in accordance with U.S. GAAP at December 31:

	1998		*1997*	
	Domestic plans	*Foreign plans*	*Domestic plans*	*Foreign plans*
	MFIM	*MFIM*	*MFIM*	*MFIM*
Projected benefit obligation at beginning of year	(1,209)	(778)	(978)	(729)
Service cost	(69)	(20)	(48)	(18)
Interest on projected benefit obligation	(74)	(51)	(62)	(49)
Plan participants' contributions	—	(8)	—	(6)
Actuarial gain (loss)	(157)	46	(158)	(10)
Benefits paid	39	35	37	34
Projected benefit obligation at end of year	(1,470)	(776)	(1,209)	(778)
Plan assets at fair value at beginning of year	2,009	484	1,762	443
Actual return on plan assets	1,170	38	165	54
Employer contribution	110	17	119	15
Plan participants' contributions	—	8	—	6
Benefits paid	(39)	(35)	(37)	(34)
Plan assets at fair value at end of year	3,250	512	2,009	484
Excess (deficit) of plan assets over projected benefit obligation	1,780	(264)	800	(294)
Unrecognized transition obligation	23	72	25	81
Unrecognized net gain from experience differences	(1,123)	(156)	(259)	(154)
Unrecognized prior service cost	(323)	—	(325)	—
Prepaid (accrued) pension cost	357	(348)	241	(367)

Weighted average assumptions used in calculation of pension obligations are as follows:

	1998		*1997*	
	Domestic	*Foreign*	*Domestic*	*Foreign*
Discount rate used in determining present values	5.5%	6.5%	6.25%	6.7%
Annual rate of increase in future compensation levels	4.0%	3.2%	4.0%	3.4%
Expected long-term rate of return on plan assets	6.25%	6.5%	6.25%	6.6%

The Group also contributes to multiemployer plans, insured plans and defined contribution plans. Such contributions were approximately FIM 260 million, FIM 85 million and FIM 39 million during 1998, 1997 and 1996, respectively.

At December 31, 1998 approximately 37% of domestic plan assets consist of Nokia securities and loans to Nokia. The remaining plan assets consist primarily of real estate, cash and other short-term investments.

New accounting standards

In June 1998, the FASB issued SFAS 133 "Accounting for Derivative Instruments and Hedging Activities," ("SFAS 133"). SFAS 133 requires that an entity recognize all derivatives as either assets or liabilities in the balance sheet at fair value. SFAS 133 is effective for all fiscal years beginning after June 15, 1999. Nokia is currently evaluating, and has not yet determined, the effect that the adoption of SFAS 133 will have on its financial statements.

The American Institute of Certified Public Accountants (the "AICPA") issued Statement of Position 98-1, "Accounting for the Costs of Computer Software Developed or Obtained for Internal Use," ("SOP 98-1") in March 1998. SOP 98-1 provides guidance on accounting for the costs of computer software developed or obtained for internal use and requires costs incurred in the application development stage (whether internal or external) to be capitalized. SOP 98-1 is applicable to all financial statements for fiscal years beginning after December 15, 1998, and should be applied to internal-use computer software costs incurred in those fiscal years for all projects, including those projects in progress upon initial application of SOP 98-1. The adoption of SOP 98-1 is not expected to have a material impact on Nokia's financial position or results of operations.

In April 1998, the AICPA also issued SOP 98-5, "Reporting on the Costs of Start-Up Activities," which requires that costs for start-up activities and organization costs be expensed as incurred and not capitalized as had previously been allowed. SOP 98-5 is applicable to all financial statements for fiscal years beginning after December 15, 1998 and initial adoption is required to be reflected as a cumulative effect of accounting change. The adoption of SOP 98-5 is not expected to have a material effect on Nokia's financial position or results of operations.

SIGNATURES

Pursuant to the requirements of Section 12 of the Securities Exchange Act of 1934, the Registrant certifies that it meets all of the requirements for filing on Form 20-F and has duly caused this Annual Report to be signed on its behalf by the undersigned, thereunto duly authorized.

NOKIA CORPORATION
March 26, 1999

By: /s/ Ursula Ranin

Ursula Ranin
General Counsel

EXHIBIT INDEX

Exhibit Number	*Description*
1	Consents of PricewaterhouseCoopers and KPMG, Independent Accountants.

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