



NOKIA



It is companies with vision that shape the applications and environments of the future.

Table of Contents

2	Strategic Intent and 1998 Highlights
3	Key Data
4	Nokia in Brief
6	To our Shareholders
8	Review of Operations
8	Business Overview 1998
24	Nokia Ventures Organization
26	Research and Development
30	Human Resources
34	Year 2000
36	Euro and Nokia
38	Board of Directors
40	Management
44	Press Releases
48	Nokia Shares
54	Contact Us
55	Investor Information
56	Abbreviations

This document is Nokia's Business Review 1998. Together with Nokia's Financial Review containing the financial statements, it forms Nokia's Annual Report 1998. If not accompanied by this document, the Financial Review can be ordered from Nokia Corporate Communications, tel. +358 9 1807 491.

Please see the information regarding certain forward looking statements on page 56 of this review.



Strategic Intent

Our strategic intent is to strive for leadership in the most attractive global communications segments through speed in anticipating and fulfilling evolving customer needs, quality in products and processes, as well as openness with people and to new ideas and solutions. Based on its resources including technological know-how, market position and continuous building of competencies, Nokia is well positioned to achieve its future goals.

Nokia is the world's largest mobile phone manufacturer and one of the leading suppliers of digital mobile and fixed telecom networks globally. The company also supplies solutions and products for fixed and wireless datacom and multimedia as well as PC and workstation monitors.

1998 Highlights

- Our net sales grew by 51%, operating profit by 75% and share price by over 220%.
- We became the world's largest manufacturer of mobile phones and sold 40.8 million handsets.
- We introduced several new technology applications and solutions, including those within GSM, wireless data, third generation and broadband.
- Our market capitalization grew to FIM 356 billion compared with FIM 110 billion in 1997.
- We continued to pay increased dividends to our shareholders. Over the last five years, our dividends have grown by 360%.

Key Data

The key data is based on financial statements according to International Accounting Standards, IAS. Quarterly proforma reports in euros for 1995–1998 on the Internet at www.nokia.com

	1998 MFIM	1997 MFIM	Change %	1998 MEUR
Net sales	79 231	52 612	50.6	13 326
Operating profit	14 799	8 454	75.1	2 489
Profit before taxes	14 603	8 371	74.4	2 456
Profit from continuing operations	9 992	5 998	66.6	1 681
Research and development	6 838	4 560	50.0	1 150
Capital expenditure	4 527	2 402	88.5	761
Market capitalization	355 530	110 014	223.2	59 796

	1998 %	1997 %
Return on capital employed	50.2	38.3
Net debt to equity (gearing)	-36	-35

	1998 FIM	1997 FIM	Change %	1998 EUR
Earnings per share from continuing operations, basic, split adjusted	17.56	10.59	65.8	2.95
Dividend per share, split adjusted	*5.75	3.75	53.3	*0.97

	1998	1997
Average number of shares (1 000 shares), split adjusted	569 170	566 564

* Board's proposal.

Business Groups	1998 MFIM	1997 MFIM	Change %	1998 MEUR
Nokia Telecommunications				
Net sales	26 103	18 826	38.7	4 390
Operating profit	5 706	4 053	40.8	960
Research and development	3 353	2 556	31.2	564
Nokia Mobile Phones				
Net sales	47 984	27 643	73.6	8 070
Operating profit	9 158	3 837	138.7	1 540
Research and development	3 103	1 714	81.0	522
Other Operations				
Net sales	6 029	7 239	-16.7	1 014
Operating loss/profit	-65	564	-	-11
Research and development	382	290	31.7	64

Personnel, Dec. 31	1998	1997	Change, %
Nokia Telecommunications	20 638	17 168	20.2
Nokia Mobile Phones	18 627	13 371	39.3
Other Operations	5 278	6 108	-13.6
Nokia Group	44 543	36 647	21.5

10 Major Markets, Net Sales	1998 MFIM	1997 MFIM	1998 MEUR
USA	11 867	6 628	1 996
China	10 421	6 290	1 753
UK	7 170	6 296	1 205
Germany	6 749	4 308	1 135
France	4 615	2 157	776
Italy	4 470	2 340	752
Finland	2 763	2 557	465
Austria	2 164	443	364
Sweden	1 748	1 623	294
Australia	1 740	1 541	293

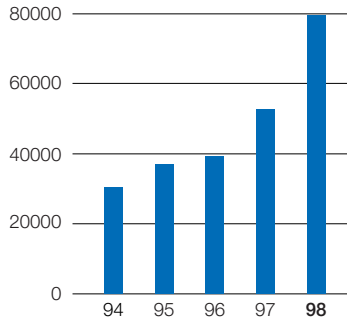
Main currencies at year-end

1 FIM	1998	1997
USD	0.198	0.187
GBP	0.118	0.112
SEK	1.594	1.443
DEM	0.329	0.331
FRF	1.103	1.108
ITL	325.733	324.675
JPY	22.815	24.056

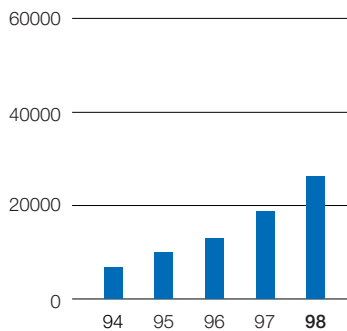
1 EUR = 5.94573 FIM

Nokia in Brief

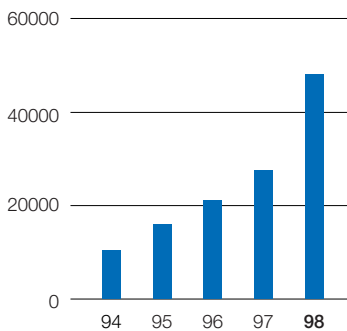
**Nokia Group
Net sales, MFIM**



**Nokia Telecommunications
Net sales, MFIM**



**Nokia Mobile Phones
Net sales, MFIM**



President and CEO Jorma Ollila: "Nokia is at the very forefront of the communications development. Being one of the companies shaping the information society, we feel we are well placed to benefit from the growing market opportunities."

Nokia comprises three business groups: Nokia Telecommunications, Nokia Mobile Phones and Nokia Communications Products. In addition, Nokia includes a separate Nokia Ventures Organization and the corporate research unit, Nokia Research Center.

At the end of 1998, Nokia had 26 production facilities, including joint ventures, in 11 countries. In addition, Nokia had 44 R&D centers in 12 countries, and a global network of distribution, sales, customer services and other operational units. Nokia employed a total of 44,543 people at year-end 1998.

Nokia Telecommunications

President Sari Baldauf: "Service and content are two important factors in the communications environment of the future. We will continue to offer solutions for service providers to meet the demand for capacity, coverage and services."

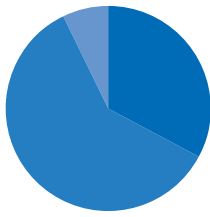
Nokia Telecommunications develops and manufactures a broad range of advanced infrastructure solutions to meet the needs of a variety of customers, including fixed operators, mobile operators and Internet service providers. In addition, Nokia provides related service creation and network management solutions, customer services and system integration. It is a world-leading supplier in GSM infrastructure, including wireless data solutions. A key player in focussed areas of fixed and datacom networks, Nokia Telecommunications is also a significant supplier of broadband and IP network solutions.

Nokia Mobile Phones

President Matti Alahuhta: "We are rapidly proceeding towards the era of a wireless information society. It all begins with technology based on human needs, solutions functioning seamlessly together and people being able to be connected whenever and wherever."

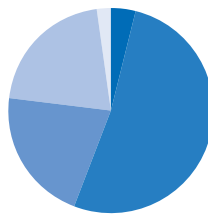
Nokia Mobile Phones is the world's largest mobile phone manufacturer with sales in over 130 countries world-wide. With a comprehensive product portfolio, covering all major standards and consumer segments, Nokia is in a strong position to lead the development toward third generation of mobile communications. Building on its know-how in core infrastructure as well as the design of software and user interface, the company is leading the development of new wireless data applications.

**Net sales
by business groups**



- Nokia Telecommunications 33% (35% in 1997)
- Nokia Mobile Phones 60% (51%)
- Other Operations 7% (14%)

**Net sales
by market area**



- Finland 4% (5% in 1997)
- Other European countries 52% (51%)
- Americas 21% (18%)
- Asia-Pacific 21% (23%)
- Other countries 2% (3%)

Nokia Communications Products

President Pekka Ala-Pietilä: "Digitalization and the Internet are driving the growth of voice, data and multimedia communications. In the future, users will benefit from access to different networks and interactivity that can be obtained using terminals with open interface and connectivity."

Nokia Multimedia Terminals is a pioneer in digital terminals for interactive multimedia applications and digital broadcasting via satellite, cable and terrestrial networks. Product development focuses on terminals for the reception of broadband transmission of digital audio, video and data services. Nokia Industrial Electronics is one of Europe's leading manufacturers of advanced PC and workstation monitors, including applications for professional desktop communication and new technologies. It is also one of the leading suppliers of mobile phone battery chargers.

Nokia Ventures Organization

Nokia Ventures Organization explores new business areas facilitating future growth and boosting Nokia's product and long term business development. To date, Nokia Ventures Organization includes two units: Wireless Business Communications focusing on the development of new wireless solutions for corporate customers, and Wireless Software Solutions focusing on the development of software products based on the Wireless Application Protocol (WAP) standard. The Silicon Valley based Nokia Ventures Fund focuses on start-up businesses and technologies globally.

President Pekka Ala-Pietilä

Nokia Research Center

Nokia Research Center interacts closely with all Nokia business units to enhance the company's technological competitiveness. The center covers the full range of activities from exploration of new technologies and product/system concepts to their exploitation in actual product development undertaken in the business units.

Senior Vice President Juhani Kuusi



To our shareholders

Last year in this review I highlighted the emergence of new trends impacting our industry. These include the Internet, the role of mobility and the importance of third generation in wireless access. 1998 did indeed prove that we have a strategy in place and can benefit from our foresight.

In 1998 we substantially increased our net sales, operating profit and earnings per share. Our operating margin was clearly above industry averages at 18.7%. Our market value increased by 223% and the Board has proposed the highest dividend so far. We strengthened our market position in many areas in the fast growing communications industry.

New opportunities

Telecommunications continues to be one of the most fascinating industries. Fundamental changes are taking place at the same time in technology, markets and human behavior. These changes are reshaping the way we live and work. They also open new opportunities.

Many of the new opportunities are being driven by the convergence of the digital industries. The vast amount of content on the networks, combined with numerous new services, is bringing us all closer to the sources of information. Mobility is freeing us from being bound to locations. Choice, speed and flexibility are the watch words of the future.

Nokia will continue to benefit from the opportunities resulting from this development. We not only participate in the change; we also shape it and influence its direction with our ideas, strategies and expertise.

Mobility and the Internet

Mobility and the Internet are cornerstones in building the wireless information society. They will shape the development of telecommunications and bring many new aspects to our work and leisure time. 1998 saw Nokia make significant advances in both arenas, and today we are among the leaders in many areas of wireless communications.

Continuing to invest in Internet technologies is essential for future success. The Internet Protocol will become part of nearly all communications. It will soon make the amount of

data traffic more significant than that of voice. Use of the Internet will expand to reach larger audiences and extend to new types of services. Almost everything, which requires the search for or exchange of information, will change. For instance, e-commerce will fundamentally contribute to the way business is conducted.

Voice traffic is already less dependent on specific location and fixed networks. The same thing will happen to data, creating an important new discontinuity. I firmly believe that Nokia is ideally placed to bring the benefits of the convergence of Internet and mobility to the markets.

Combining foresight with excellence in execution

We are approaching the wireless information society at quite some pace. An increasing part of all communications – be it voice, data, images or video – is wireless. New subscribers are purchasing mobile phones as their primary communication devices and existing users are upgrading to newer models more frequently than ever before. Operators need to invest in coverage and capacity to offer new services.

In this changing environment our goal is to establish a balance between foresight and excellence in execution, and then to maintain it. A good example is our technology investment to combine the features of wireless, fixed and broadband technologies. This work has already resulted in orders to build integrated national networks.

Another example is the segmentation of mobile phone markets. An understanding of market developments combined with high class execution in production increased our production volumes by 92% to 40.8 million phones in 1998, and resulted in a major increase in our global market share.

People are key

Growth is key to our future. It is inspiring and we have already gained some experience managing it. But managing such rates of growth and taking the best advantage of opportunities are only possible in an organization with a strong corporate culture.

Our values – customer satisfaction, respect for the individual, achievement and continuous learning – are not only the core of our culture but also deeply ingrained in every individual within the organization. Our people are our values. Speed, quality and openness as well as integrity, teamwork and modesty are also important parts of the Nokia approach. In a growing organization we also increasingly need empowerment and accountability.

Last year we hired 9819 new employees. Fresh ideas and inspiration inject new energy into the company, but we also need to ensure that it keeps on going in the right direction. Our values and corporate culture are key to achieving this. Only in this way can we maintain our winning foresight and continue to achieve excellence in execution, the key factors in our business success.

Creating shareholder value

Shareholder value is maintained and increased by foresight, combined with excellence in execution.

We have a lot of expertise, an energetic global organization and many interesting opportunities ahead. We aim high and our objective is strong growth and good profitability leading to increased shareholder value. We greatly respect the confidence our shareholders have placed in us, and aim to live up to it by positioning Nokia as a strong global leader in the most exciting industry of our times.

Board of Directors

The Chairman of our Board of Directors, Casimir Ehrnrooth has decided not to seek re-election in the Annual General Meeting on March 17, 1999. He has served on the Board since 1989 and as Chairman since 1992.

Not only has Mr Ehrnrooth led Nokia through a challenging process of change in the 1990s. He has also offered his invaluable support to management. On behalf of my Board colleagues as well as all Nokia personnel, I would like to extend my warmest thanks to Casimir Ehrnrooth for his services to our company.

Jorma Ollila

We are focusing on the most attractive segments of the global telecommunications industry as we face the convergence of the digital industries. This creates a discontinuity offering new opportunities and growth.

Review of Operations

Business overview 1998

Cellular penetration end 1998, %

Finland	58
Norway	48
Sweden	46
Israel	42
Italy	36
Singapore	34
Australia	34
Denmark	32
Japan	31
Austria	27
USA	25
Switzerland	23
UK	22
France	19
New Zealand	18

Source: World Bank, EMC, Nokia estimates

Nokia continued to focus on growth areas when choosing technologies and standards in 1998. By exploiting market and technology discontinuities, such as digitalization and deregulation, we further strengthened our position as one of the leading communications industry players world-wide. Our global operations in both infrastructure and terminal businesses resulted in volume benefits.

Nokia became the world's largest mobile phone manufacturer. We are also one of the leading suppliers of digital mobile and fixed networks globally. In addition, we develop and supply solutions and products for fixed and wireless datacom and multimedia as well as advanced PC and workstation monitors.

In 1998, a total of 58% of Nokia's net sales originated from Europe, 21% from the Americas and 21% from Asia Pacific. Our five biggest markets were the U.S., China, the UK, Germany and France.

Service and content drive the growing telecom market

In the communications industry, services and content together with an expanding mobile phone penetration and shortening product lifecycles drive market growth. As we supply our customers and consumers with the most technologically advanced and cost efficient network and terminal solutions based on open platforms, we remain well positioned to grow faster than the market.

In 1998, an expanding subscriber base, usage growth in advanced GSM markets and the increase of data services resulted in continued network investments around the world. Our infrastructure equipment and systems portfolio, which includes solutions for both wireline and wireless voice and data communications services, satisfies the demand for advanced solutions.

In line with our expectations, wireless continued to substitute wireline in personal voice communications. An estimated 306 million mobile phone subscribers at year-end indicates that mobile telephony is becoming the preferred means of personal communications. The growing number of users and wireless data drive usage growth, merging mobility and the Internet, the two dominant development trends in communications.

In some advanced markets mobile voice communications already generates more revenue for operators than fixed line voice communications. This led to several operators announcing an acceleration of their mobile network build-out plans during 1998. In certain cases, data is creating more revenue than voice also in the fixed market.

The future of communications has no limits as people continuously look for easier, faster and more efficient ways to communicate. Based on our belief that global and open standards help to create markets for volume products, Nokia will continue to introduce solutions and products based on non-proprietary standards and technologies in 1999 and beyond.





Nokia DX 200 is a versatile, scalable and cost efficient switching platform for both fixed and mobile applications. We continued to build on our position in the fixed network market and developed further our equipment and solutions.

Offering operators cost-efficient solutions

Conventional call traffic is shifting to wireless networks. In response to the capacity requirements of mobile operators we launched the Nokia High Capacity solution, taking GSM to a new level. With this revolutionary GSM solution, Nokia can offer its customers more capacity, power and efficiency. Capacity is no longer the limit for service creation or subscriber growth.

The new Nokia DX 200 "i-series" mobile switching products take the industry lead by offering the market's highest GSM switching capacity, but they also bring savings in network operations. Required site sizes can be reduced by up to 60% and power consumption can be cut by up to 70%. Our MSCi (Mobile Switching Center) is capable of handling 400 000 subscribers, which more than doubles current figures for other Nokia mobile switching products.

The Nokia MetroSite base station sub-system, part of the Nokia High Capacity solution enables operators to increase network capacity up to ten times that of conventional networks.

The complete Nokia MetroSite solution is intended for networks in areas of dense call traffic, such as business sectors, train or subway stations and shopping districts. The Nokia MetroSite base station is available for GSM 900, 1800, and 1900 frequencies and can also be equipped with both GSM 900 and GSM 1800 transceivers for dual band networks. The Nokia MetroSite solution supports all current Nokia voice and data features, as well as future software upgrades for General Packet Radio Service (GPRS) technologies, expected to be introduced during 1999.

Creating services based on the GSM platform

Through 1998, our leading role in providing innovative services, solutions and network management systems further expanded the GSM platform.

The Nokia Artus wireless data product family enables the provision of enhanced GSM network capabilities. Using these products, operators can build networks with advanced Internet-based wireless data services and offer their subscribers faster access to those services.

We also took the evolution of the GSM platform further with our IN (Intelligent Network) solutions. These allow operators to bring new services and applications to the market including freephone, premium rate, virtual private network, personal number, calling card and prepaid services.

Internet shaping both content and technologies

The acquisition of Ipsilon Networks Inc. in late 1997, now part of Nokia Telecommunications, allowed us to approach Internet Service Providers (ISPs) and operators with new product offerings. In 1998 we established relationships with major ISPs and sold Internet Protocol (IP) related equipment to customers world-wide, including a growing number of security solutions. These solutions provide access to the Internet and corporate intranets.

In acquiring Vienna Systems in 1998, we further strengthened our growth potential in the global IP telephony market and enhanced our ability to offer new applications to service providers. Based in Canada, Vienna Systems specializes in IP telephony solutions. As part of Nokia Ventures Organization, it will continue to design and manufacture hardware and software products for the distribution of voice, fax and video over IP networks, including intranets and the Internet.

Nokia's access technology is deployed in networks world-wide

Nokia Synfonet is a comprehensive SDH (Synchronous Digital Hierarchy) solution with full network level management features. Nokia Synfonet is already in use in the networks of some 140 customers world-wide. A significant new development to the Synfonet family during 1998 was WDM (Wavelength Division Multiplexing) tech-

High Capacity GSM System

- More capacity, power and efficiency in GSM networks
- Nokia MetroSite enables ten-fold capacity increase
- New Nokia MSCi handles up to 400,000 subscribers
- With Nokia MSCi, site sizes can be reduced by 60%, power consumption by 70%
- Operates on all GSM frequencies



The Nokia MetroSite solution, part of the Nokia High Capacity GSM System, includes a high-capacity base station, a base station controller, a transmission node and two integrated radio options for cellular transmission. The Nokia MetroSite base station, intended for metropolitan areas of dense call traffic, allows operators cost savings throughout the network lifetime.

Since being acquired by Nokia, Ipsilon, a pioneer in IP routing has broadened Nokia's IP technology expertise. The Nokia IP440 Integrated Firewall solution (pictured) provides secure Internet connectivity and offers high-performance IP routing. Nokia has already sold its Nokia IP 400 series security solutions to over 300 customers.



GSM in 1998

- At year-end, Nokia had supplied GSM networks to 78 operators in 37 countries
- Contracts with 12 new GSM customers
- A total of 324 GSM operators in 120 countries (GSM Association members end 1998)
- Some 45% of all mobile phone subscribers used GSM technology

nology which enables the transmission of several optical channels in one single cable. During the year, Nokia also won and delivered the first WDM based transport network projects.

The use of data in wireline networks is increasing and fixed operators are optimizing their access networks for the transmission of data traffic. We have continued to develop solutions for the benefit of our customers as they strive to meet the growing volume of data traffic. We support both IP and ATM (Asynchronous Transfer Mode) based technologies.

Broadband technologies paving the way to high-speed data services

As the demand for data and multimedia services grows, the Nokia Eksos broadband access solution is one way for operators to overcome this capacity challenge. The Nokia Eksos product family allows subscribers to access broadband service connections quickly and flexibly, including a range of IP-based services such as remote working and high-speed Internet access.

In 1998, we further developed and introduced broadband network technologies, and signed a contract for the delivery of the world's first nationwide broadband network in New Zealand. Nokia's technology integrates ADSL (Asynchronous Digital Subscriber Line) broadband access and IP network solutions in the same network. We look forward to continuing to provide our customers with a smooth migration to broadband, high-speed data IP services.

Based on projected growth in the demand for datacom, we anticipate that more operators will begin to use Nokia Eksos and similar access solutions in their networks. We also expect to see a growing number of new operators looking for innovative solutions to provide advanced, fully digital subscriber line services to their business and residential subscribers.

The convergence of mobile and fixed networks will continue

Operators are continuing to build integrated service offerings, based on converged fixed and mobile access. In 1998, we announced a breakthrough deal in Singapore for an integrated network solution for fixed and mobile voice services. The solution uses Nokia's integrated DX 200 switching solution as the common platform together with Nokia's Intelligent Network (IN) capabilities, creating an ideal platform for the introduction of future services and technologies.

Service and system integration gaining in importance

Nokia recognizes that the increasing sophistication of modern telecommunications services demands an even closer integration between operators' telecommunications networks and the service and business management systems that support them. We established the new Service Management and Integration (SMI) business unit in Nokia Telecommunications in 1998. The unit is responsible for service management product portfolio both in telecom and datacom networks and will provide Nokia's mobile, fixed and IP-related services to operators. This offers new, start-up operators one-stop-shopping solutions, while offering existing ones end-to-end solutions for the fast introduction of new, tailored services.

In 1998, we signed a global alliance with Computer Sciences Corporation (CSC) to further strengthen our system integration capabilities. As a result, we can offer our customers end-to-end solutions for the provision of innovative value-added services. We can also deliver service integration projects in which network elements are integrated into operators' service management systems.

In 1999, we will continue helping operators with their network rollouts and provide services to enable them to run their networks more efficiently. We also intend to strengthen our customer service orientation and area organizations in key markets world-wide.

Durability and security are essential in the professional networks

Our Professional Mobile Radio (PMR) business continued to grow in 1998, with product offerings including complete trunked analog or digital mobile radio networks. The Nokia Actionet analog networks and the Nokia TETRA (Terrestrial Trunked Radio) digital networks serve demanding user groups, such as police and emergency rescue services. These networks are based on open standards for dedicated professional mobile communications, in line with our strong support for open technological platforms.

Nokia is the world's leading supplier of TETRA networks. In 1998 we signed major agreements in Europe, including the world's first nationwide commercial TETRA network to Dolphin in the UK. We also signed agreements in Latin America's analog PMR markets, including those for the supply of Actionet networks in Argentina and Chile.

Paving the way towards third generation

As Nokia is delivering terminals to all global digital second generation systems and is a leading supplier of GSM infrastructure, it is important for our future business that we are actively involved in the creation of different third generation standards. Success requires that we continue with systems research work. This has been organized as a Nokia-wide activity.

Nokia has been one of the leading contributors to WCDMA (Wideband Code Division Multiple Access) standardization and has participated actively in global second and third generation standardization.

We will develop and provide a full system offering with a smooth evolution path to our existing and new GSM customers. Operators can upgrade their networks step by step for personal mobile multimedia services with enhancements like High Speed Circuit Switched Data (HSCSD), General Packet Radio Service (GPRS) and Enhanced Data for GSM Evolution (EDGE). To complete the path, Wideband CDMA will be optimized and commercialized for personal mobile multimedia serv-

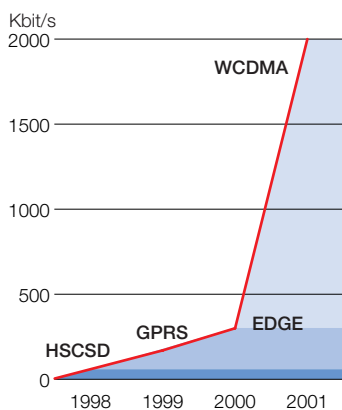


A good example of a new, further-developed communications solution is the fast, reliable and highly secure digital TETRA network for public authorities and the security sector. Belgium's authority mobile radio network ASTRID will be built around Nokia's TETRA radio communication system. Nokia is the leading TETRA supplier in the world.



In September, Nokia announced that it is the first telecommunications company to have large-scale manufacturing facilities for complete GSM networks in China including mobile switches, base station systems and cellular transmission. Nokia has several manufacturing facilities in China and had, by the end of September, delivered line capacity to more than 10 million subscribers.

Increase in GSM data rates is paving the way towards 3rd generation



- HSCSD enables data speeds of up to 57.6 Kbit/s.
- GPRS offers data speeds over 100 Kbit/s. EDGE boosts speeds further to 384 Kbit/s.
- 3rd generation provides capabilities for personal mobile multimedia services.

ices using the new third generation spectrum allocation, further utilizing the advanced and evolving GSM core network.

All these steps represent major R&D and standardization efforts at Nokia. Once the work is completed and commercialized, data bit rates will increase from the present 9.6 Kbit/s up to 2 Mbit/s providing an excellent capability for personal mobile multimedia services.

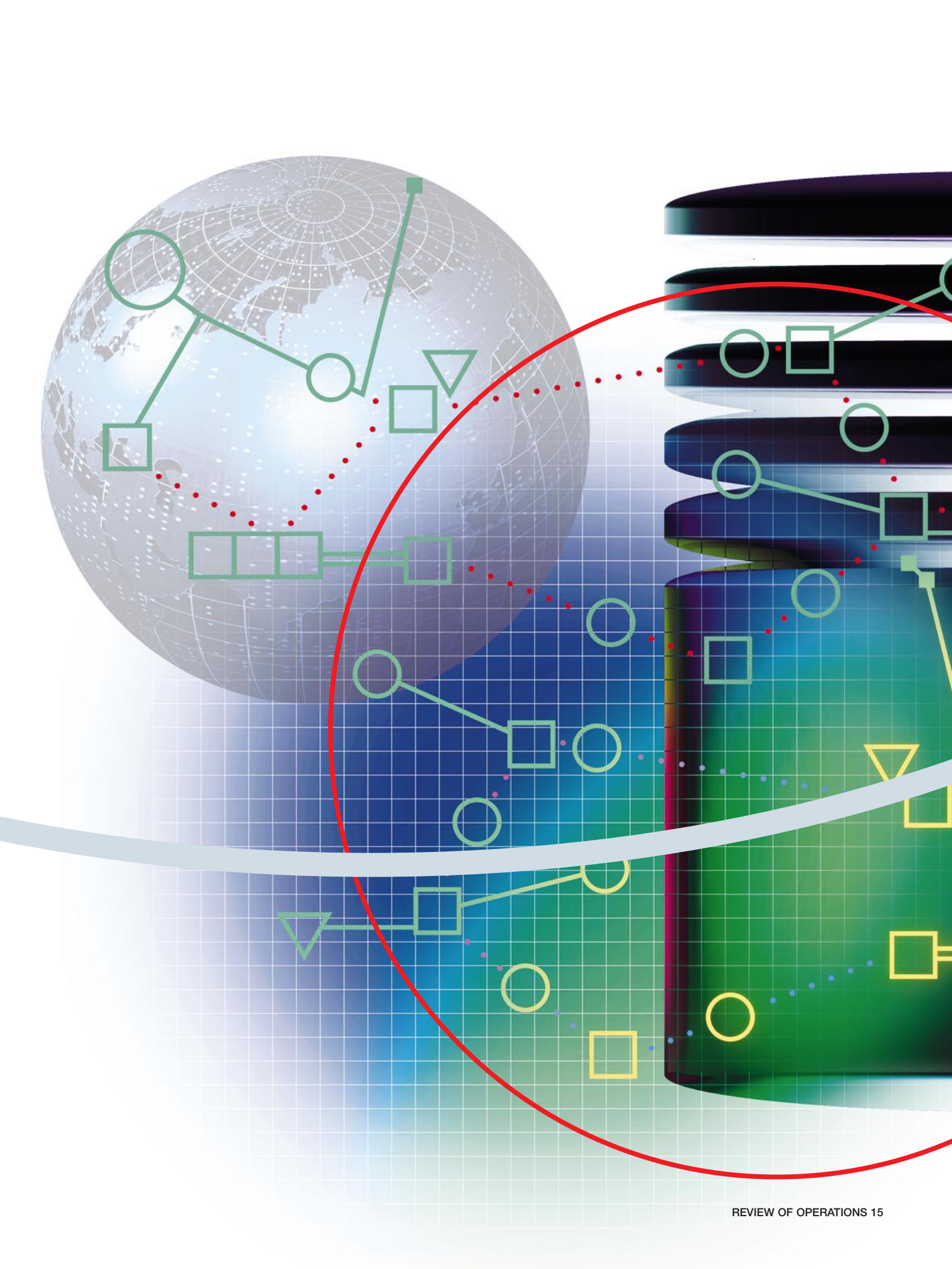
Experimental WCDMA networks will be built and expanded for field testing in 1999 in China, Finland and Japan, where the system performance will be demonstrated to our existing and new customers.

In 1999, we will continue the development of new wireless technologies in Japan, where our corporate R&D unit will support our participation in the WCDMA project.

Open interfaces creating market opportunities

We continued to contribute to the development of the wireless information society in 1998. We strengthened our market position by co-founding major industry ini-

In the future, different networks will operate in growing synergy to meet the needs of various users to be connected whenever they so choose anywhere in the world. With its resources, including technological know-how, Nokia is well positioned to supply operators with the most advanced solutions.





From left to right: Nokia 5110, Nokia 6110 and Nokia 8810.

tiatives such as Symbian and Bluetooth and continued our strong development of Wireless Application Protocol (WAP). As global and open standards help to create markets for volume products we will also in the future introduce solutions and products based on non-proprietary standards and technologies.

WAP is a global license-free and platform-independent protocol for intelligent messaging to wireless terminals. The first WAP specification, introduced in 1998, provides an open standard to bring Internet content and advanced services to digital mobile phones and other mobile communications devices.

Symbian aims at creating an open and common software platform for mobile devices, such as communicators and smart phones. Its advanced operating system EPOC is open to all industry participants developing wireless data terminals and applications.

Bluetooth is a short-range radio technology, expanding wireless connectivity to personal and business mobile devices. It enables users to connect their mobile phones, computers, printers, digital cameras, network access points and other electronic devices to one another without cables. As an example, through Bluetooth, users will be able to automatically receive e-mail on their notebook computers via the digital mobile phones in their pockets.

Nokia sold more mobile phones than any other company in 1998

In early December 1998, we passed the milestone of 100 million mobile phones manufactured. During the year, we sold 40.8 million phones. Based on these figures and the estimated overall market volume of 163 million, Nokia became the world's largest manufacturer of mobile phones. While competition continued to increase, price erosion of our mobile phones was less than expected.

During 1998, we launched 17 new products to the markets. These include the dual band Nokia 6150 phone for GSM 900/1800, the trimode Nokia 5160 for AMPS 800/TDMA 800/1900, the premium life-style model Nokia 8810 for GSM

Nokia's main phone models

(February 1999)

DIGITAL:

GSM 900: Nokia 5110, 6110, 8810, 9110

GSM 1800: Nokia 5130, 6130, 6138

GSM 900/1800: Nokia 6150, 7110

GSM 1900: Nokia 5190, 6190, 9000ii

CDMA 1900: Nokia 2170, 5170

PDC Japan: 3 models

AMPS/TDMA 800: Nokia 5120, 6120

AMPS/CDMA 800: Nokia 2180, 5180

AMPS/TDMA 800/1900: Nokia 5160, 6160

AMPS/CDMA 800/1900: Nokia 6185

ANALOG:

AMPS: Nokia 282, 252, 918

ETACS: Nokia RinGo

NMT 450: Nokia 540, 650

NMT 900: Nokia RinGo

The Nokia 7110 is the world's first GSM phone that is fully compliant with the Wireless Application Protocol. This dualband GSM 900/1800 phone was introduced to the public in February 1999 at the GSM World Congress in Cannes, France.





China, the world's single largest GSM market, is also one of the fastest growing cellular markets. Nokia was one of the first mobile phone manufacturers to introduce a Chinese user interface and Chinese Short Message capabilities in mobile phones. Over 50% of the mobile phones that Nokia sold in China were manufactured domestically.

900, the Nokia 9000il Communicator for GSM 1900 and the second generation Nokia 9110 Communicator for GSM 900. We also introduced phones for various analog standards and for the Japanese digital standard PDC.

Nokia's mobile phone sales grew fast on all continents. Growth was strongest in the Americas, and especially in the U.S. where the transition from analog to digital standards accelerated throughout the year. Overall, more than 80% of the phones we sold world-wide in 1998 were digital.

We aim to solidify our market leadership position in 1999 and beyond by continuing to introduce mobile phones that meet the needs of different user segments.

Segmentation becoming increasingly important

A mobile phone is a true personal communications device. It answers one of the most fundamental human needs – the need to communicate. At the same time, with the segmentation of mobile phone markets, individuals are now purchasing phones that suit their different lifestyles. These two underlying factors have contributed to the fast growth of the mobile subscriber base.

The rapid change of the mobile phone to a global consumer product from a niche device has required a new approach in producing and marketing mobile phones. Understanding segmentation is a prerequisite for success.

Today, everyone is a potential mobile phone customer. As the market has become increasingly segmented, the ability to master various product categories has become crucially important.

In a segmented consumer market with high volumes, critical success factors include comprehensive product portfolio, a strong and appealing brand as well as efficient global logistics. We will continue to focus in these areas with the aim of sustained brand leadership.



The U.S. was Nokia's single largest market for handset sales in 1998. Nokia manufactures and delivers analog and digital mobile phones to the American market, including AMPS, GSM, TDMA and CDMA technologies.

Worn around the neck, the new Nokia LPS-1 inductive loopset is an easy to use device for smooth interaction between a hearing aid and a mobile phone. It is the first product of its kind in the world and enables a person who is hard of hearing easier use of a digital mobile phone.

Products, brand and design based on human technology

An essential part of the Nokia brand is our design. It integrates our award-winning interface solutions with a style that combines ergonomics and aesthetics. User-friendliness is becoming increasingly important, as the technology is getting more and more complex and sophisticated owing to the trend of the digital convergence of various key technologies. Our aim is to combine the most sophisticated technology with user-friendly interfaces. In this way users can concentrate on utilizing the devices without needing to focus on the equipment or technologies. We call this approach Human Technology: technology, which is easily understood, accepted and learned.

Mobile phone penetration may exceed 100%

The mobile phone subscriber penetration level in Finland exceeded 55% in 1998, representing the highest level in the world. During the year, another three markets reached 40–50% penetration. We estimate that in the most developed markets, such as the Nordic countries, mobile phone unit penetration may eventually rise above 100%, as mobile phone users want more than just one model to meet their different needs. In December 1998, for the first time anywhere in the world, the number of mobile phone subscriptions exceeded the number of fixed line telephone subscriptions in Finland.

In 1998, Nokia raised its global long-term mobile phone subscriber base forecast to one billion in the year 2005. We also said that we believe that a substantial portion of the phones sold that year will have multimedia capabilities.

Both new subscribers and users buying a new phone are contributing to market growth. More and more new subscribers are purchasing a mobile phone as the primary communications device. At the same time, the technological and lifestyle-related features of mobile phones continue to develop, and users are upgrading their phone models with newer ones more frequently.

The growing subscriber base and upgrade market have already made mobile phone industry the world's largest consumer electronics industry. In 1998, the upgrade market represented close to 40% of the overall mobile phone market. We expect that after the turn of the millennium, the upgrade market will exceed 50% of total sales.





Nokia's production countries

Infrastructure

- China
- Finland
- Malaysia
- Russia
- UK
- USA

Terminals

- Brazil
- China
- Finland
- Germany
- Hungary
- Mexico
- South Korea
- USA

In 1998, Nokia launched a total of 17 new mobile phone models. Also in Latin America, the transition from predominantly analog to digital systems accelerated throughout the year.

Media phones combining characteristics of a PC

A continuously growing share of voice communications is becoming wireless. At the same time, Internet usage continues to enjoy explosive growth. Based on these trends, we estimate that in the year 2000, media phones – mobile communication devices that can surf the Internet – will outsell portable computers.

Nokia has continuously promoted the trends of usability and the Internet. We introduced our first media phone – the Nokia 8110i – already in 1997, allowing the use of smart messaging, text based Internet access, fax, e-mail and file transfer services. We believe that in the future mobile Internet will be one of the so called “killer applications” for Universal Mobile Telecommunications System (UMTS).

Success through continuous flow of product introductions

Our strategy is tied to digital convergence that places the mobile phone at the center of all personal communications. Along our way to maintaining our leading role, we recognize that one of the most critical success factors is the speed with which we can identify, develop and deliver products that consumers want. As a continuous flow of new product introductions is the only way to succeed, we aim to maintain our present pace of new product launches or even intensify it in the future.

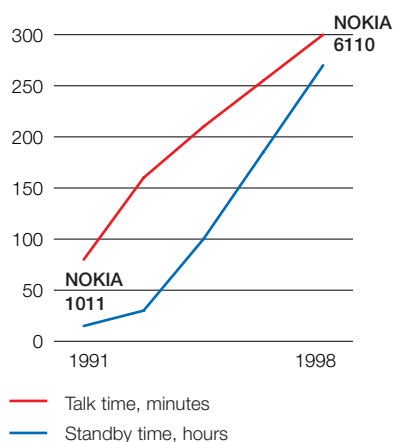
In the future, our product introductions will include new dual band phones. We estimate that by the end of 1999, dual band GSM phones will be the single largest category within GSM. We also think that by the end of 2000, dual band phones will largely replace single-mode models in the sales of new phones.

To answer the growing demand for our mobile phones world-wide, we announced investments during 1998 totaling close to FIM 1 billion in a new mobile phone manufacturing and distribution center in Hungary and production capacity expansions in Finland. We also announced that we will invest another FIM 1 billion to boost production capacity at our mobile phone manufacturing plant in Germany.



Future telematics solutions for road vehicles offer yet another business potential within telecommunications. Nokia's smart traffic products combine our expertise in mobile phone networks, terminals and wireless data products.

The evolution of talk and standby times in Nokia GSM phones



Nokia was the first manufacturer to present a production ready GSM phone in 1991.

Digitalization and Internet driving future terminal development

It is becoming evident that mobile phone users want to have access to many different services in addition to being reachable and making phone calls. We will continue our research and development, as well as our cooperation with various service-providers. With these efforts we aim to facilitate services like browsing the Internet and intranet, Internet shopping, education and e-mail – all through mobile phones.

Another future solution of mobile communications is telematics in cars. We expect to have our first applications for this market in 1999. The integrated communications system in cars adds to their safety and security. It will offer users access to various value-added services when driving and also guide them along the best possible routes.

Product concepts and software development for multimedia terminals

The digitalization of cable and satellite services in Europe, mainly in Germany, was delayed due to the EU Competition Commission's negative decision regarding the

With the increasing segmentation of the communications devices market, individuals are now purchasing phones that suit their different lifestyles. The growing subscriber base together with people upgrading their mobile phones with newer ones has already made the mobile phone industry the world's largest consumer electronics industry. In the future, mobile phones will be multifunctional mediaphones.





Wireless vending is yet another service available for mobile phone users. This application integrates wireless data and vending machines to allow consumers to make purchases by using a mobile phone.

planned joint venture of major German media groups in 1998. Anticipating faster market growth in 1999, we continued to develop digital multimedia terminals for use through satellite, cable, terrestrial and in wireless and fixed telecommunications connections.

Throughout the world operators are currently looking for new value-added services to increase their profitability. We will integrate such services, including Internet access and web browsing, e-mail, home shopping, home banking and pay per view into the Nokia DVB (Digital Video Broadcasting) multimedia terminals. These services will be based on different IP technologies.

To gain flexibility and to move closer to our customers world-wide, we outsourced the manufacture of Nokia's digital multimedia terminals to the world's largest electronics contract manufacturer, SCI Systems Inc. in 1998. This enables us to focus on further developing our existing product portfolio, creating completely new digital product and distribution concepts, as well as developing new value-added software applications. We expect to introduce a new generation of so-called "one-chip" multimedia products in the first half of 1999.

Building on Nokia's know-how in DVB, we also develop gateway terminals that operate through wireless LANs (Local Access Network). The ongoing development will allow the combination of the best technology available and open plat-

forms. Users will have unlimited access to different networks for services using the DVB standard for video, high-speed data, and Internet Protocol for data and voice.

Facing challenges in the display business

The global computer monitor business suffered from the South East Asian crisis in 1998. Approximately 80% of the computer monitors world-wide are manufactured in Asia and Asian manufacturers benefited from the devaluation of their local currencies. Together with the industry's over-capacity, this resulted in price erosion of 30–50%.

Still, sales volumes of Nokia branded monitors continued to grow. Our market share increased and our branded sales accounted for 60% of total sales for 1998. We also continued to expand our product portfolio by introducing new 14", 15" and 18" flat panel display products.

We strengthened our market share especially in the U.S., where we have been successful in targeting the market segment for high-end business-users. Our display customer base in the U.S. now includes leading corporate customers. In addition, we expanded our market share in Europe, especially in Germany, Italy and Sweden.

Searching for efficiencies in display production

In 1998 we started display production in Mexico. We intend to further increase display production in Hungary and Mexico. At the same time, we will reduce production in Finland, thereby further streamlining our operations and bringing production closer to key customers.

Our aim is to increase our market share especially in the 19" and 21" screen size market segments. Having introduced our first flat displays based on liquid crystal technology in 1997, we will continue to strengthen the production capabilities of flat screen displays in 1999.



Nokia's advanced display products with interactive on-line communications capabilities open the door to entirely new ways of working, educating and remote teaching, also within the health-care industry. CATRED (Computer Assisted Telematic Remote Education and Development) in primary health care is a collaboration project in Finland to improve the education opportunities of people working at primary health care centers.

Nokia Ventures Organization

In addition to our extensive ongoing investments in new businesses and technologies within our current business groups, we are expanding our activities into completely new promising areas in order to move closer towards our vision of future communications solutions.

Investigating new business areas

We have been actively investigating and investing in these new areas since 1995 within diverse business groups. To further facilitate these activities at the corporate level as well we established the Nokia Ventures Organization in 1998. It is a separate organization running parallel to our three business groups, Nokia Telecommunications, Nokia Mobile Phones and Nokia Communications Products. Nokia Ventures Organization's target is to foster growth opportunities beyond the current scope of the existing business groups. It seeks and develops areas with growth potential over the next five years.

Seeking to exploit growth opportunities

Nokia Ventures Organization consists of both external and internal business venturing within Nokia. Through our internal venturing, we search for new business concepts making use of our collective know-how in all the key technologies, competencies and capabilities at our disposal. We continuously seek to exploit growth opportunities in the competitive arena emerging from the convergence of telecom, datacom, IT and broadcasting industries.

New business units piloting new applications and solutions

Nokia Ventures Organization focuses primarily on new telecom and datacom solutions, as well as service and software businesses for multiple customer groups including corporations. It currently includes two business units.

Wireless Business Communications develops and offers new wireless solutions for corporate customers and Internet Service Providers. These solutions consist of network systems and terminals incorporating different technological elements including wireless LAN and IP telephony. In 1998 we acquired Vienna Systems, a recognized leader in the global IP telephony market, and incorporated it into Nokia Wireless Business Communications.

Wireless Software Solutions supports and further develops Wireless Application Protocol (WAP) technology for the wireless environment. Utilizing WAP as a basic building block, it develops software solutions for various application areas including banking and e-commerce.

Both business units are currently piloting with customers in various ways, and we expect Nokia Ventures Organization to have its first market entries in 1999.

Nokia Ventures Fund completes the search for future growth sectors

Through external venturing with the means of a venture capital fund we are looking outside Nokia's current scope for new disruptive technologies, skills, competencies or other types of know-how that Nokia sees as a potential building block for future growth. This effort is aided by the Nokia Ventures Fund. Established in 1998, it focuses on new areas that Nokia to date has not yet explored.

Nokia Ventures Fund, with a capital of USD 100 million, is part of Nokia Ventures Organization. Its purpose is to reach well beyond into the future of the time scale and business scope of Nokia's initiatives in order to boost the company's long term business development. Based in Silicon Valley, California, it operates world-wide with special emphasis on innovation centers.

Business units

- Wireless Business Communications
- Wireless Software Solutions
- Nokia Ventures Fund



As we are entering the era of the information society, an increasing amount of voice, image and data is communicated electronically. Nokia is continuously conducting research work in this area. Seeking to exploit growth opportunities, we established Nokia Ventures Organization in 1998.

Research and Development

R&D globally

- More than 13 000 employees within R&D
- 44 R&D centers in 12 countries
 - Australia
 - Canada
 - China
 - Denmark
 - Finland
 - Germany
 - Hungary
 - Japan
 - Malaysia
 - Sweden
 - UK
 - USA

Advanced R&D work and operations during 1998 clearly helped Nokia strengthen its position. As a result, we are better prepared for the challenges and great opportunities that lay ahead as expansion of the information society continues.

In 1998, over 13 000 Nokia employees were active in research and development. Nokia's R&D personnel has grown by some 5 000 employees during the last two years. Today, 30% of Nokia's personnel works in R&D.

Strengthening our long term research and development potential

At Nokia, we feel privileged to be among the developers of the information society. We believe we have extensive know-how and co-operate closely with leading centers of excellence. Research and development work reaching out to the future, is also carried out in collaboration with our business partners.

Nokia's global network of R&D centers and networking with other companies, research institutes and universities are today a central part of an efficient R&D operation. The Nokia global R&D network also expanded during 1998 to include new R&D centers in China, Denmark, Germany, Hungary and Sweden. With the help of our global cooperation network, we are able to influence and ensure quick responses to technological developments.

In 1998, we expanded our global R&D collaboration significantly. We co-founded the Symbian, Bluetooth and WAP consortia and partnerships. We also established Nokia Ventures Organization. We strengthened our competencies by acquiring UID (User Interface Design), a multimedia software company in Sweden, Matra Nortel Communication's GSM Terminals R&D unit to strengthen Nokia's Smart Traffic Products business in Germany, and Vienna Systems in Canada, a leading company in IP telephony.

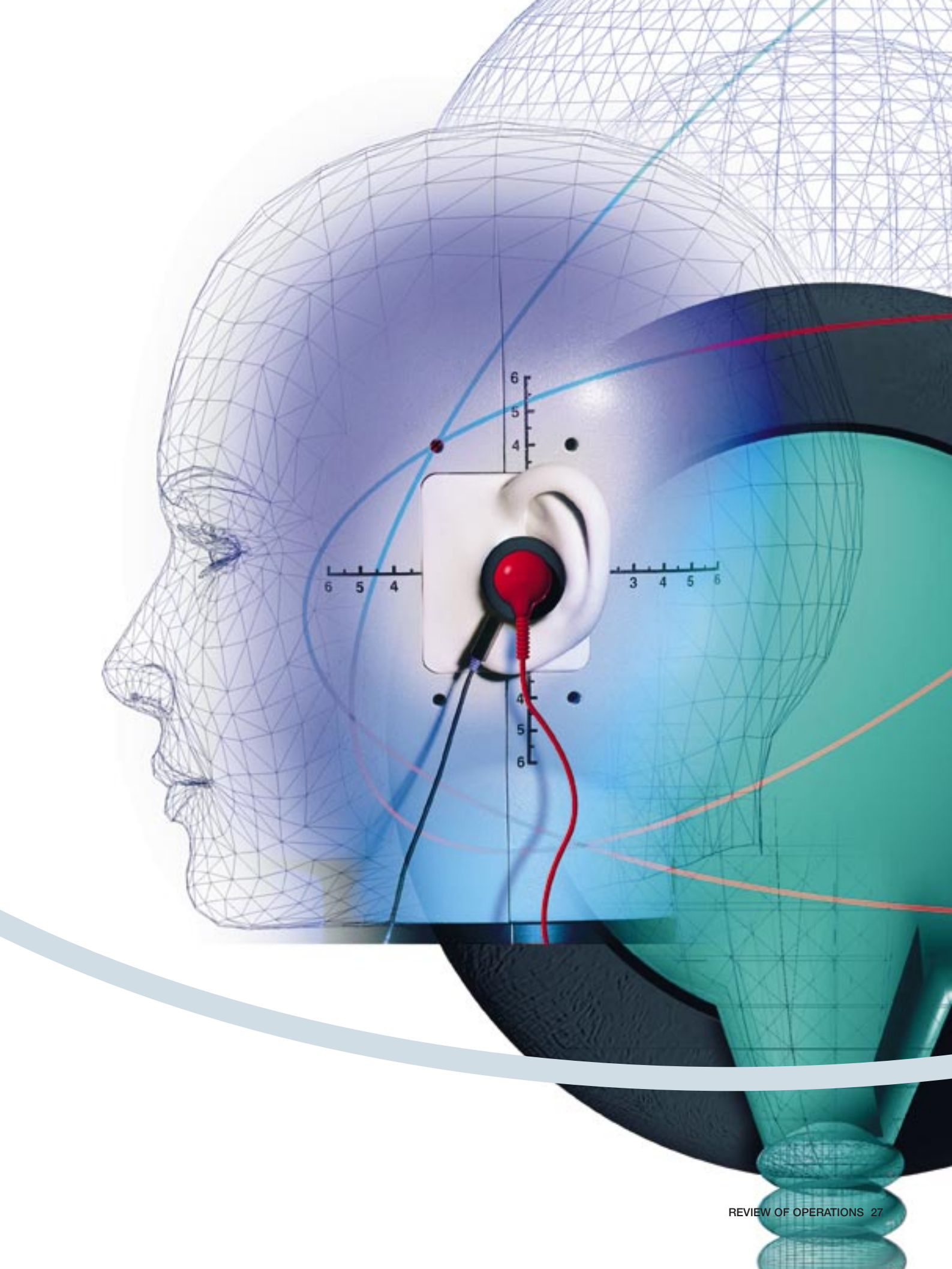
Developing third generation mobile communications

Based on our continued communication systems research we are actively involved in the creation of the three major third generation standards proposals which were submitted to ITU: WCDMA, cdma 2000 and UWC 136 (Universal Wireless Communications). All these new standards follow an evolution path from the second generation cellular standards GSM, cdma One (IS-95) and US TDMA (IS-136). Nokia delivers terminals for all of these standards.

The standardization of the GSM based wideband CDMA progressed well all over the world, with Nokia as one of the leading contributors. During the year, we successfully completed a call with a Nokia-made third generation terminal in Japan.

In 1998, we already delivered mobile stations to the Japanese NTT DoCoMo's WCDMA validation system. In the future, we will also develop and provide full system offerings for third generation telecommunications infrastructure – providing a smooth evolution path to our existing and new customers.

Continuous enhancement of voice quality and acoustic design play an essential role in Nokia's product development. This includes new methods for analyzing and designing acoustic components to meet the challenge of the trend of smaller-sized communications products.





With the help of our global R&D network and research co-operation we aim to strengthen our technological competencies in order to continue to be the preferred choice for customers.

Our corporate research unit, Nokia Research Center, continued to develop new mobile data services for GSM in addition to its R&D and standardization work on third generation systems. Nokia offers operators an opportunity to upgrade their networks step by step for personal mobile multimedia services, starting with second generation GSM enhancements like HSCSD, GPRS and EDGE. WCDMA will use the new third generation spectrum allocation and utilize the advanced and evolving GSM core networks. Along with this development, the data bit rates are growing from the present 9.6 Kbit/s up to 2 Mbit/s, providing smooth personal mobile multimedia services.

In 1998, we developed and integrated a WCDMA experimental system consisting of the mobile phone, base station and switching equipment. In 1999, we will build and expand these experimental networks for field testing in China, Finland and Japan, to further demonstrate the system's capabilities to our existing and new customers.

In developing GSM further, Nokia Research Center concentrated also on location services. In addition, we continued the development of other second and third generation technologies. We also worked on the use of the 58 GHz frequency band for building cellular transmission in high-capacity mobile networks.

Major new partnerships, consortia and cooperation forms

In 1998, we co-founded a joint company called Symbian to boost the evolution of wireless information devices in the rapidly expanding wireless communications

market. This industry effort ensures the interoperability of application platforms, content, and services. Symbian provides core software, including the operating system, application frameworks, applications and development tools for all EPOC licensees. EPOC is an advanced real-time, multithreading and scalable operating system designed especially for small handheld communications devices. Symbian will provide solutions that deploy key industrial mobile standards and technologies such as Internet technology suite, Wireless Application Protocol (WAP), Java and Bluetooth.

In 1998 we also co-launched a new consortium for wireless connectivity called Bluetooth. At the end of the year, Bluetooth consisted of more than 250 active members aiming to create an open standard for short-range communications between different electronic devices. It defines the air interface and communication protocols for a low-power radio link operating on the 2.4 GHz ISM (Industry, Scientific and Medical) band. By forming an intuitive wireless networking to connect various devices, Bluetooth effectively replaces traditional cables and interfaces. Being a radio-based link, Bluetooth does not require a line-of-sight connection in order to establish the communication. This enables the creation of completely new applications like personal devices that can synchronize their information without user intervention.

We were one of the founding members of the Wireless Application Protocol in 1997, an open standard that brings Internet based advanced services to mobile phones and other wireless terminals. In 1998, we contributed actively to the first WAP standard. We believe that Nokia is also well prepared for the mobile Internet telephony and will continue to develop our mediaphones enabling direct access to Internet information and services.

Continuing IP and network evolution

During 1998 our data networking R&D focused on IP security, broadband access, wireless data and IP telephony. We further developed IP routing and security, especially within integrated router/firewall platform and products. The key elements of our security solution include the Nokia IPSO routing operating system and the integration of firewall software to Nokia routers, as well as Nokia hardware platforms. We delivered our integrated security solutions to a wide range of corporate customers and Internet service providers.

In data communications research, Nokia Research Center focused on enhancements of the Internet protocols. Our R&D on Internet quality of service, Internet telephony and voice over the Internet contributed to the work of the Internet Engineering Task Force (IETF) and other standardization bodies.

In the broadband access area, we focused on the broadband IP system solution, including our Digital Subscriber Line multiplexer, edge router and remote access node. In the IP telephony area, we engineered platforms for IP telephony gatekeeper and gateway products. In 1998, we introduced the Nokia GSM Intranet Office (GIO), a revolutionary combination of IP telephony and GSM.

Our packet access development focus was on the GPRS products. GPRS development work has strategic importance for us, as related competencies and solutions will be reused in our R&D activities for third generation mobile communications. Within wireless data, we continued our research and development work on messaging and packet access, including WAP products and further enhancements to GSM short messaging offerings.

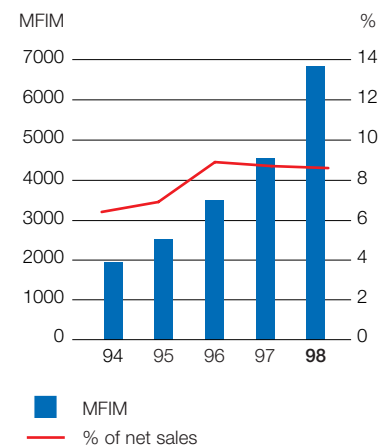
Actively participating in standardization of speech coded

During 1998, Nokia Research Center continued to develop speech, audio and video coding solutions for GSM, UMTS and other cellular systems. We are one of the main developers of the AMR (Adaptive Multi-Rate) speech codec that ETSI (European Telecommunications Standards Institute) has accepted as the next generation speech coding standard for GSM systems. AMR is also the main candidate for the UMTS speech coding standard.

Investments in R&D

- FIM 6 838 million in 1998
- R&D investments increased by 50%
- 8.6% of net sales used within R&D in 1998

R&D investments

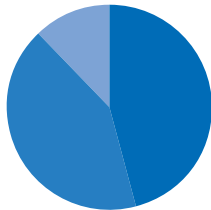


Human Resources

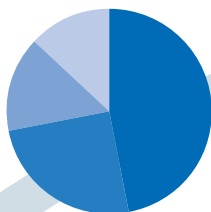
Nokia people

at year-end	1998	1997
Nokia Telecommunications	20 638	17 168
Nokia Mobile Phones	18 627	13 371
Other Operations	5 278	6 108
Nokia Group	44 543	36 647
Finland	21 093	19 779
Other European countries	11 022	8 249
Americas	6 836	4 676
Asia-Pacific	5 562	3 943
Other	30	-
Total	44 543	36 647

Personnel Dec. 31, 1998



- Nokia Telecommunications 46% (47% in 1997)
- Nokia Mobile Phones 42% (36% in 1997)
- Other Operations 12% (17% in 1997)



- Finland 47% (54% in 1997)
- Other European countries 25% (22% in 1997)
- Americas 15% (12% in 1997)
- Asia-Pacific 13% (11% in 1997)

Operating in the world's fastest growing industry makes working at Nokia exciting. We strive for the leadership position in all of our businesses, meaning that we actively drive current markets and create new ones. Thanks to our pioneering new products and overall interesting business environment, our personnel increased by nearly 10 000 employees during 1998. At the end of 1998, Nokia employed 44 543 people throughout the world.

Flat organization facilitates efficient networking

The combined competencies of the whole organization, our operational mode and efficient processes serve as the foundation for success and growth. The Nokia Way of operating is characterized as a flat, networked organization facilitating speed and flexibility in decision-making. Approximately 85% of Nokia's total personnel have individual e-mail address. Equal opportunity, openness and respect for individuals and their ideas are key elements when dealing with customers, suppliers or other Nokia employees.

Understanding of work goals helps commitment

At Nokia, leadership and communication in all units are based on mutual openness. Annual development discussions between employees and their superiors as well as our yearly opinion surveys are illustrations of this. A clear understanding of individual work goals and areas of responsibility, as well as knowledge of Nokia's overall business development helps each employee to feel committed and motivated. We are continuously improving our operational performance management and appraisal processes. The Investing in People process is a main means of accomplishing this. It includes development discussions that cover objectives, performance measures, strengths, professional development, training needs and feedback on individual performance.

Our most important challenges include identifying and further developing competencies. Strong networking helps to connect the various individual skills of our employees into Nokia's collective know-how. To further facilitate this we encourage job rotation within the company. The Nokia-wide Intranet system informs employees about open vacancies in the various units. We will also continue to develop career path tools to help employees plan their career development.

Offering opportunities to continuously improve skills

The atmosphere at Nokia encourages the company's employees to try and reach beyond their limits. Everyone at Nokia has the right to take the initiative to develop his skills and abilities in a way that best suits his individual career development within the company. To facilitate this process, we have a wide array of programs and systems in place to support continuous learning. They include management, leadership, technical and product training as well as interpersonal skills development. In addition, some training programs are linked to academic degree studies.

Nokia offered challenging projects for several hundred students to have the opportunity to finish their studies with a thesis connected to the development of telecommunications. Nokia Student Exchange Program offered international work experience to close to 100 university students during 1998.

First Learning Centers established

To make learning as efficient as possible and unify our training processes across the company, in 1998 we established our first four Nokia Learning Centers. They offer an efficient way for transferring know-how throughout the company. Operating in China, Finland, Italy and Singapore, the Learning Centers deliver training activities



Highly skilled and motivated people are one of Nokia's greatest assets. We are continuously investing in the competence development of our personnel. To also offer an efficient way to transfer know-how throughout the company, we established our first four Nokia Learning Centers in 1998. Also in training the Nokia values: Customer Satisfaction, Respect for the Individual, Achievement and Continuous Learning are an underlying factor.

in more than 50 countries. We are already planning how to integrate the U.S. and Latin America under the same umbrella.

Encouraging results from opinion surveys

In 1998 we again carried out an extensive employee opinion survey. This annual exercise gives us valuable feedback on how Nokia employees value the company and the way it operates. The high response rate (72%) showed that employees are very strongly committed to the company. Confidence in one's future with Nokia had continued to grow, and proved to be extremely high. Overall, employees expressed their satisfaction with Nokia as an employer.

According to the survey, employees have a clear understanding of the objectives of their departments and business units, a result of developments in internal communications. This, we believe, is one of the prerequisites for successful team working.

Our employees have also expressed their views on areas in which they look forward to seeing further improvements made. In the 1998 opinion survey, these areas included recognition and reward. Employees affirmed continued development in management's capacity to communicate and recognize good performance. This has encouraged us to continue to build and implement performance-related pay systems within Nokia.

Training

	1998	1997
Total training costs, MFIM	750	550
Average training days/person	11	11

Efficiency in operations

	1998
Net sales per person, FIM*	1 928 180
Operating profit per person, FIM*	360 150
Number of patent applications	over 700
Number of Invention Reports	nearly 2 000

* Calculated with average
number of employees.



Mexico had about 2.5 million mobile phone subscribers in the fall of 1998. Nokia has brought its production close to this fast growing telecom market. Nokia's mobile phone factory in Reynosa employs some 900 people. Nokia also started production of displays in Reynosa during the year.

Competitive compensation and benefit programs

We believe that motivation and job satisfaction come from many different sources. Therefore, we try to make all tasks both challenging and rewarding. It is our policy to reward employees for good performance and positive development.

Nokia has a number of global bonus and compensation programs complementing the local programs in place. These include stock option plans, and the Nokia Connecting People Bonus plan under which a total of approximately FIM 400 million will be paid out based on 1998 performance. In various units, there are also other incentive plans where incentives are linked to the performance measures. These include the Individual Incentive Plan, the Programme/Project Incentive Plan and the Team/Production Incentive Plan. There are also incentive plans for production personnel as well as for R&D and other work teams. In addition, a special Achievement Award is given to individuals or teams to recognize outstanding contributions, significant achievements or exceptionally good performance. Based on 1998 performance, approximately FIM 500 million will be paid under these above-mentioned incentive plans.

Induction programs tailored for each new employee

The success stories of our products and solutions together with our overall positive image have helped us in our recruitment efforts. Nearly 10 000 new employees joined us in 1998. A majority of them began their Nokia career within research and development, production and marketing. To have everyone fit into the company in the easiest and most efficient way, we offer new employees modulated and tailor-made induction and orientation. This includes orientation, planning, target setting, training, induction discussions and evaluation with the help of a tutor. In 1999, we will continue to further develop our induction processes for new employees.

On average, employees had been with Nokia for approximately three years in 1998.

Internet becomes a popular method of recruitment

We were one of the first companies to begin using Internet extensively when recruiting. It has proven to be a time and cost efficient method for attracting potential new employees. We have also received positive feedback from applicants on this addition to our recruitment activities.

In 1998, we also continued our cooperation with various educational institutions in the fields of research and development, recruitment, as well as education and training on a global scale. We made good progress, particularly in China, Germany, Hungary, the UK and the U.S. As this cooperation complements the Nokia-wide recruitment processes, we aim to continue it in 1999, when we again look forward to recruiting new employees throughout the world.

Towards a sustainable Information Society

At Nokia, we promote a safe and healthy workplace. We take environmental issues into account in our daily work and continuously develop our working conditions.

We find it important to serve the society in which we operate. We support charitable, educational, human rights, and community activities in the form of both donations and other resources. In addition, our goal is to develop products and services that foster communication and learning between people and societies. It is our aim to pave the way toward a sustainable information society in which people are able to access information and entertainment in the most efficient and material-saving ways.

For more information on Nokia and environmental issues, please visit our website at www.nokia.com/environment and get acquainted with Nokia and the Environment 1998, a separate publication appearing in the second half of 1999.

Incentive plans

- Nokia Connecting People bonus plan
- Stock option plans
- Individual Incentive Plan
- Programme/Project Incentive Plan
- Team/Production Incentive Plan
- Achievement Award



At Nokia, daily work is often carried out in cross-functional teams. This requires flexibility and an open mind. Social interaction skills and the ability to understand different cultures are among the focus areas in various courses organized throughout Nokia, for instance in Nokia Learning Centers.

Year 2000

Preparing for the coming millennium

For us at Nokia, Year 2000 compliance means that neither performance nor functionality of our products and systems is affected by the date, prior to, during or after the year 2000.

The world we live in is heavily automated. Processors are widely used and some contain certain programming languages and conversions using only a two-digit year presentation. This practice has come to be known as the "Year 2000 issue".

The Year 2000 issue may materialize if the computers or systems fail to recognize that the year 1999 is followed by the year 2000, the year 2000 is a leap year, and that figures 99 or 00 do not mean the end of the file.

At Nokia, we have established processes to evaluate and manage the possible risks and costs associated with the turn of the millennium. We have analyzed the Year 2000 issue from the standpoint of the equipment and services provided to customers, and the various information technology systems in use within the company.

A project to minimize the possible Year 2000 risks

The Nokia Year 2000 Project has overall responsibility for all Year 2000 issues within Nokia. The Project includes identifying potential risk areas, increasing risk awareness and introducing action plans and guidelines for managing the risks.

We consider Year 2000 compliance to mean 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 (DISC PD2000-1:1998).

Testing the compliance of our products

We have announced that, based on testing and verification Nokia's display products, digital multimedia terminals and mobile phone battery chargers are Year 2000 compliant, and our 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. We have also provided solutions for upgrading those products which to date are not compliant but can be made Year 2000 compliant.

To address Year 2000 compliance issues for our telecommunications infrastructure products, we have grouped those products into three categories based on the products, Year 2000 compliance status and our decision to provide or not to provide a technical solution for Year 2000 compliance. The three categories are: 1) products that are already Year 2000 compliant, 2) products that will be made Year 2000 compliant, and 3) products that will not be made Year 2000 compliant. We have completed the classification of the products, and will continue to inform our customers accordingly. For products classified to be made Year 2000 compliant, we have decided to have a technical solution for the Year 2000 compliance available during the first quarter of 1999. Our 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.

Aiming to continue production over the millennium shift

We aim to continue our production over the year-end 1999. To accomplish this, we have implemented a "production sites by subsystems" approach. This integrates relevant Year 2000 issues arising from the production systems as well as from the facilities, supplier readiness and information systems subprojects. Our plan is to have also our R&D and after sales related systems Year 2000 compliant during the first half of 1999.

We have also completed an inventory of our other information systems and identified them as critical or non-critical. For the critical information systems we plan to achieve Year 2000 compliance during the second half of 1999 at the latest.

The detailed scope of our Facilities Year 2000 subproject includes such matters as building management, security, telephones, heating and air-conditioning systems and general equipment. We expect 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.

Our Supplier Readiness subproject focuses on materials, parts, products, information software and services that Nokia sources from third parties, and which are then integrated or sold in connection with Nokia products or otherwise used by us. It also includes the readiness of our suppliers for their continued performance into the year 2000. We have categorized our suppliers as critical or non-critical. Our aim is to verify 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, risks and contingency planning

At the end of 1998, we estimated our direct Year 2000 costs to amount to FIM 450 million. In 1998 we used approximately 50% of the estimated total.

The Nokia Year 2000 Project has not resulted in deferral of spending for other systems and equipment as planned. However, our cost estimates may vary in the future. We will continue to update this figure, as well as our other Year 2000 related information in 1999, as we learn more about our and third parties' Year 2000 compliance.

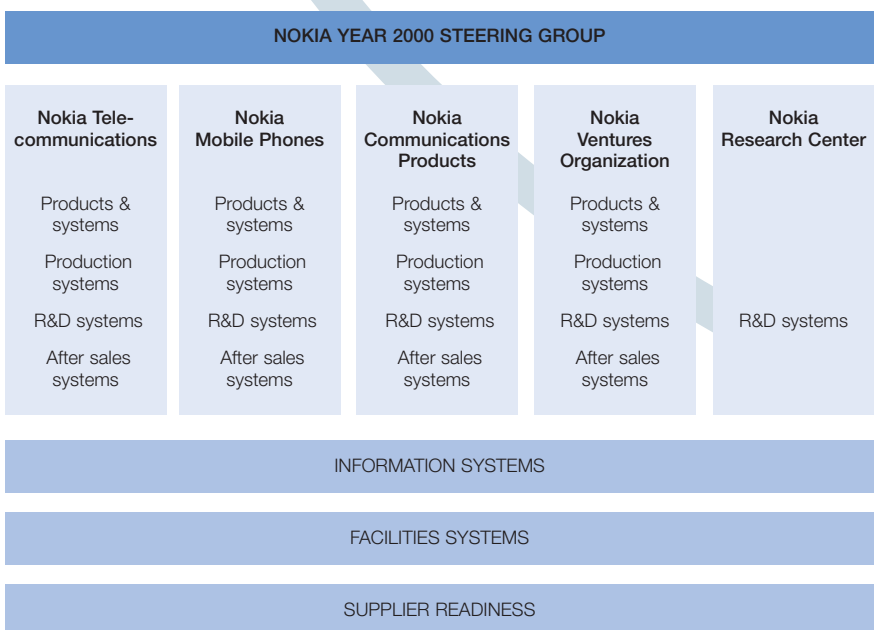
We realize that failing to correct material Year 2000 issues could result in an interruption in or failure of certain normal business activities. Such failures could have a material adverse effect on the company's business, results and financial condition. Like most companies, we are connected to various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

The scope of our Year 2000 Project is to identify and address Year 2000 issues within Nokia, and to evaluate Year 2000 readiness of third parties on whom we rely. When learning that critical Year 2000 issues have not been appropriately addressed, we intend to develop contingency plans.

Due to general uncertainties related to the Year 2000 issues, 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 the year 2000. However, we believe that our Year 2000 Project is significantly reducing the level of this uncertainty.

Information

For updated information on the Year 2000 issues, please visit our website at www.nokia.com/year2000. Please see the information regarding certain forward looking statements on page 56 of this review.



The Nokia Year 2000 Project is managed by a Steering Group, consisting of representatives of all Nokia business units and the defined Year 2000 subprojects. The Steering Group is appointed by and reports regularly to the Nokia Group Executive Board. The Project is divided to subprojects addressing the 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, facilities systems 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.

Euro and Nokia

Euro conversion rates

The fixed, irrevocable conversion rates between the euro and national EMU currencies are:

1 euro =	
13.7603	Austrian schilling
40.3399	Belgian franc
2.20371	Dutch guilder
5.94573	Finnish markka
6.55957	French franc
1.95583	German mark
0.787564	Irish pound
1936.27	Italian lira
40.3399	Luxembourg franc
200.482	Portuguese escudo
166.386	Spanish peseta

Economic and Monetary Union and the euro

In January 1999, 11 European Union member states, Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain, formed the Economic and Monetary Union (EMU).

The 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 31st, 1998.

Nokia has traditionally had a strong foothold in Europe. In 1998, over half of net sales originated from Europe. The 11 EMU member states accounted for one-third of Nokia's net sales. The majority of Nokia's production, R&D and total personnel was based in Europe.

Euro impacts Nokia positively

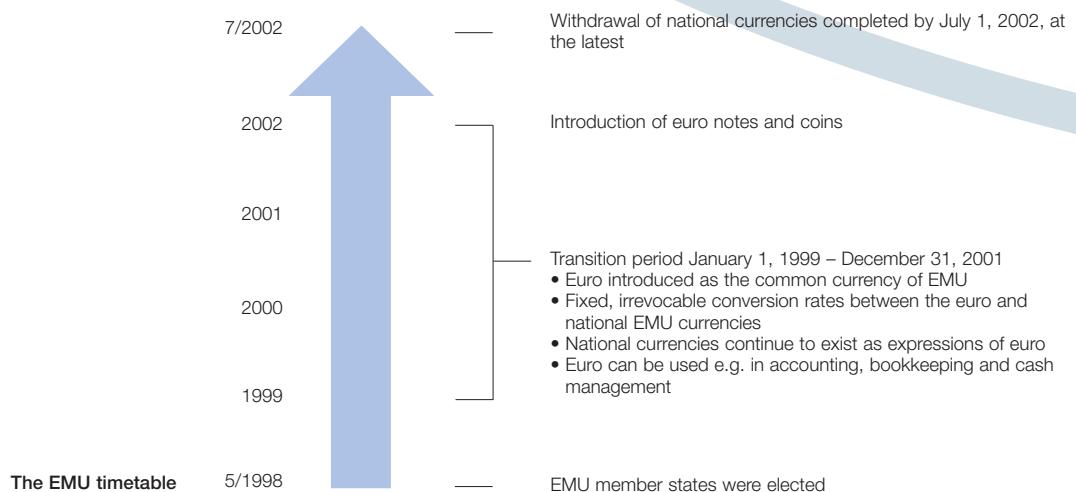
The euro market, formed by the 11 EMU member states, is one of the largest markets in the world, which we believe is leading to a more stable and favorable operating environment. EMU and the euro support further economic growth and impact Nokia's international competitiveness positively.

The introduction of the euro decreases the foreign exchange risk to be managed in Nokia. It also decreases the cost of cash management due to lower transaction costs and more efficient liquidity management. In addition, it eases the management of liquid funds and interest rate risks.

The introduction of the euro is expected to make markets more transparent thereby contributing to increased competition and opening of the markets. Nokia is experienced in operating in competitive markets and we believe that we are well positioned to benefit from these developments.

Nokia supports the wide use of euro

According to our euro strategy, we support the wide use of the euro during the transition period. Internally, we began using the euro for financial reporting as of January 1st, 1999. Beginning with the first quarter of 1999 results report, all financial information will be published in the euro. To facilitate comparisons, historical figures will be restated to euro by using the fixed, irrevocable conversion rate between the euro and Finnish markka.





Nokia's share and dividends

The Board of Directors will propose at the Annual General Meeting on March 17, 1999 that the share capital and the nominal value of Nokia shares be converted to euros. The dividends for 1998 will be declared in Finnish markka. From 1999 onwards the dividends will be declared in euros.

Nokia shares have been quoted in euros in Helsinki, Frankfurt, Paris and London Stock Exchanges since January 1999.

Euro in business transactions

In business transactions with our customers, suppliers and sub-contractors operating in the EMU member states, we prefer the euro as a trading currency. However, we respect the "no compulsion – no prohibition" principle in the use of the euro. This means that the use of the euro is always mutually agreed upon with the business partner. In non-EMU countries we are open to consider using the euro in business transactions if our customer so prefers.

Euro changeover costs

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

Euro information available on the Internet

Information on the use of the euro in Nokia is available on our website at www.nokia.com/euro.

On January 1st, 1999, eleven European Union member states formed the European Economic and Monetary Union, and introduced a new common currency, the euro. The euro market is one of the largest markets in the world, leading to a more stable and favorable operating environment, also for Nokia. In the picture, celebration of euro in Brussels.

Board of Directors

January 29, 1999

Chairman

Casimir Ehrnrooth, 67

Doctor of Technology h.c.

– Member since 1989 and Chairman since 1992

Chairman of the Board of Directors of Kymmene Corporation 1991–1996, Chairman and CEO of

Kymmene Corporation 1986–1991

Member of the Board of Directors of Merita Plc, MeritaNordbanken Plc, Nordbanken Holding AB (publ.) and UPM-Kymmene Corporation

Member of the Supervisory Board of Continental AG

Member of the European

Advisory Committee of the New York Stock Exchange

Vice Chairman

Iiro Viinanen, 54

President and CEO of Pohjola

Group Insurance Corporation

– Member and Vice Chairman since 1996

Member of the Finnish Parliament 1983–1996, Finland's Minister of Finance 1991–1996

Vice Chairman of the Board of Directors of UPM-Kymmene Corporation and member

of the Board of Directors of

Kone Corporation

Chairman of the Board of Federation of Finnish Insurance Companies

Pirkko Alitalo, 49

Senior Executive Vice President

of Pohjola Group Insurance

Corporation, Investments

– Member since 1992

Member of the Board of Directors of Alma-Media Corporation, Aspo plc, Neptun Maritime Oyj and Skandia Insurance Company Ltd

Dr Edward Andersson, 65

Prof. emer.

– Member since 1973

Chairman of the Board of Directors of Oy Aga Ab, member of the Board of Directors of Pohjola Group

Insurance Corporation and Chairman of the Supervisory Board of Merita Bank plc

Paul J. Collins, 63

Vice Chairman of Citigroup Inc. and

Director of Citicorp and Citibank N.A.

– Member since 1998

Vice Chairman of Citicorp and

Citibank N.A. 1988–1998

Director of Kimberly-Clark Corporation

Jouko K. Leskinen, 55

President and CEO of Sampo Group

and member of the Board of Directors of Sampo Insurance Company plc

– Member since 1994

Vice Chairman of the Board of Directors of Neste Oy 1989–1992,

member of the Board of Directors of Neste Oy 1987–1989 and Senior

Executive Director of Neste Oy 1987–1992

Chairman of the Board of Directors

of Cultor Corporation, Vice Chairman

of the Board of Directors of UPM-

Kymmene Corporation and member of

the Board of Directors of Finlines Plc

Vice Chairman of the Board of

Federation of Finnish Insurance

Companies and member of the

Board of Employers' Confederation

of Service Industries

Jorma Ollila, 48

President and CEO, and Chairman

of the Group Executive Board of

Nokia Corporation

– Member since 1995

President of Nokia Mobile Phones

1990–1992, Senior Vice President,

Finance of Nokia 1986–1989

Member of the Board of Directors of

ICL plc, Otava Publishing Company

Ltd and UPM-Kymmene Corporation

Deputy Chairman of the Board of the

Confederation of Finnish Industry

and Employers

Member of The European

Round Table of Industrialists

Robert F. W. van Oordt, 62

Chairman of the Supervisory Board

of NKF Holding N.V.

– Member since 1998

Chairman of the Executive Board of

NV Koninklijke KNT BT 1993–1996,

Chairman of the Executive Board of

Bührmann-Tetterode NV 1990–1993,

Executive Vice-President and COO,

and member of the Board of

Directors of Hunter Douglas Group

NV 1979–1989

Member of the Board of Directors of

Schering-Plough Inc. and N.V. Union

Minière S.A. and member of the

Supervisory Board of Greenfield

Capital Partners and Rodamco N.V.

Vesa Vainio, 56

Chairman of the Board of Directors

of MeritaNordbanken 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)

– Member since 1993

Chairman of the Board of Management

and CEO of Merita Bank Ltd and

CEO of Merita Ltd 1992–1997,

President of Kymmene Corporation

1991–1992

Vice Chairman of the Board of

Directors of Metra Corporation and

member of the Board of Directors of

UPM-Kymmene Corporation

Chairman of the Board of Directors

of Finnish Central Chamber of

Commerce

Secretary

Ursula Ranin

Corporate Governance

Tasks of the Board of Directors

The Board decides on matters which in relation to the Group's activities are of significant nature. Such matters include confirmation of the strategic guidelines, approval of the annual budgets and action plans and decisions on major investments and divestments.

The President, the Chairman and the members of the Group Executive Board of the company are appointed by the Board. The Board also determines their remuneration.

Election and Term of Members of the Board of Directors

According to the Articles of Association the company has a Board of Directors composed of a minimum of seven and a maximum of ten members.

The members are elected at the Annual General Meeting convening annually in March–April. According to the Articles of Association the term of the Board members is one year at a time.

The Board elects a Chairman and a Vice Chairman from among its members for a term at a time.

Committees of the Board of Directors in 1998

The Personnel Committee monitors the personnel policy of the Group and oversees its implementation and development. The Committee also prepares matters concerning personnel issues, including the salaries and principles for the remuneration of senior executives, prior to their submission to the Board. The Personnel Committee was composed of the following members of the Board: Vesa Vainio, Pirkko Alitalo, Paul J. Collins and Jorma Ollila.

The Audit Committee consists of non-executive directors. Its responsibilities include the consideration of the financial statements and the internal control systems and the internal audit. The Committee meets in the presence of external auditors, the CFO and the Group Controller and, upon invitation, other senior executives. The Audit Committee was composed of the following members of the Board: Dr Edward Andersson, Jouko K. Leskinen and Robert F.W. van Oordt.

The Nomination Committee prepares proposals for the general meeting concerning the composition of the Board and the remunerations and remuneration principles of the members of the Board. The committee was established in 1998 and was composed of the following members of the Board: Iiro Viinanen, Paul J. Collins and Jouko K. Leskinen.

Meetings of the Board of Directors

The Board met ten times in 1998. Two of the meetings were held in a form of conference call.

President and CEO

The Board of Directors appoints the President of the company. Jorma Ollila has been President and CEO since 1992.

Remuneration

In 1998 the remuneration paid to the Chairman of the Board was FIM 449 891, to the Vice Chairman of the Board FIM 353 890 and to the non-executive directors in total FIM 1 542 018. The salary and other remuneration paid to the President and CEO was FIM 5 817 818 including a bonus for 1997 of FIM 1 300 000.



Nokia Group Executive Board.

Sitting from left: Matti Alahuhta, Sari Baldauf, Jorma Ollila and Pekka Ala-Pietilä.

Standing from left: Olli-Pekka Kallasvuuo, Veli Sundbäck, Yrjö Neuvo, Anssi Vanjoki and Mikko Heikkonen.

Management

January 29, 1999

Group Executive Board

Chairman Jorma Ollila, 48

President and CEO

– Member since 1986, Chairman since 1992

– Joined Nokia 1985

President of Nokia Mobile Phones 1990–92, Senior Vice President, Finance of Nokia 1986–89

Member of the Board of Directors of ICL plc, Otava Publishing Company Ltd and UPM-Kymmene Corporation Deputy Chairman of the Board of the Confederation of Finnish Industry and Employers, Member of the European Round Table of Industrialists

Pekka Ala-Pietilä, 42

Executive Vice President and

Deputy to the CEO,

President, Nokia Communications Products

– Member since 1992

– Joined Nokia 1984

President of Nokia Mobile Phones 1992–98, Vice President, Product Marketing of Nokia Mobile Phones 1991–92, Vice President, Strategic Planning of Nokia Mobile Phones 1990–91

Member of the Board of Alma Media Corporation, Economic Information Bureau and Finnish-Japanese Chamber of Commerce

Dr Matti Alahuhta, 46

President, Nokia Mobile Phones

Responsible for Nokia's operations in Japan

– Member since 1993

– Joined Nokia 1975–82 and 1984

President of Nokia Telecommunications 1992–98, Executive Vice President of Nokia Telecommunications 1992, Senior Vice President, Public Networks of Nokia Telecommunications 1990–92 Chairman of the Board of Federations of Finnish Electrical and Electronics Industry, Vice Chairman of the Board of the Technology Development Centre, Ministry of Trade and Industry Member of the Board of the Central Chamber of Commerce of Finland and International Institute for Management Development (IMD)

Sari Baldauf, 43

President, Nokia Telecommunications Responsible for Nokia's operations in China

– Member since 1994

– Joined Nokia 1983

Executive Vice President of Nokia APAC 1997–98, President, Cellular Systems of Nokia Telecommunications 1988–96, Vice President, Business Development of Nokia Telecommunications 1987–88 Member of the Board of Technical Research Centre of Finland and Finland-China Trade Association, Member of the National Committee for the Information Society Issues

Mikko Heikkinen, 49

President, Network Systems, Nokia Telecommunications

– Member since 1998

– Joined Nokia 1975

President, Network and Access Systems of Nokia Telecommunications 1995–96, Senior Vice President, Area Management of Nokia Telecommunications 1993–95, Senior Vice President of Nokia Cellular Systems 1988–92

Olli-Pekka Kallasvuo, 45

Executive Vice President, CFO

Responsible for Nokia's operations in the U.S.

President, Nokia Inc.

– Member since 1990

– Joined Nokia 1980

Executive Vice President Nokia Americas 1997–98 Executive Vice President, CFO of Nokia 1992–96

Senior Vice President, Finance of Nokia 1990–92

Chairman of the Board of Nextrom Holding S.A.

Member of the Board of Finnish Broadcasting Company and Telecommunications Industry Association (USA)

Dr Yrjö Neuvo, 55

Senior Vice President, Product Creation, Nokia Mobile Phones

– Member since 1993

– Joined Nokia 1993

Senior Vice President, Technology of

Nokia 1993–94, National Research Professor of the Academy of Finland 1984–92

Vice Chairman of the Board of Vaisala Corporation, Member of the Finnish Academy of Technical Sciences, The Finnish Academy of Science and Letters, Academiae Europae, Foreign member of Royal Swedish Academy of Engineering Sciences, Fellow of the Institute of Electrical and Electronics Engineers

Veli Sundbäck, 52

Executive Vice President, Corporate Relations and Trade Policy

– Member since 1996

– Joined Nokia 1996

Secretary of State at the Ministry for Foreign Affairs 1993–95, Under-Secretary of State for External Economic Relations at the Ministry for Foreign Affairs 1990–93 Member of the Board of Directors of Oy AGA Ab and Nextrom Holding S.A, Vice Chairman of the Board of the International Chamber of Commerce, Finnish Section, Chairman of the Trade Policy Committee of the Confederation of Finnish Industry and Employers (TT)

Anssi Vanjoki, 42

Senior Vice President, Europe & Africa, Nokia Mobile Phones

– Member since 1998

– Joined Nokia 1991

Vice President, Sales of Nokia Mobile Phones 1991–94, Sales Director of Suomen 3M Oy 1989–91

Auditors

Eric Haglund, 64

Authorized Public Accountant (KPMG)

Lars Blomquist, 55

Authorized Public Accountant (PricewaterhouseCoopers)

Deputies:

KPMG Wideri Oy Ab

Authorized Public Accountant (Deputy to Eric Haglund)

SVH PricewaterhouseCoopers Oy

Authorized Public Accountant (Deputy to Lars Blomquist)

Nokia Head Office

Corporate Relations and Trade Policy
Veli Sundbäck

Chief Financial Officer
Olli-Pekka Kallasvuo

Corporate Controller
Maija Torkko

Corporate Treasurer
Timo Korvenpää

Investor Relations
Martin Sandelin

Technology
Kaj Lindén

Research Center
Juhani Kuusi

Strategy and Information Management
Mikko Kosonen

General Counsel
Ursula Ranin

Human Resources
Hallstein Moerk

Communications
Lauri Kivinen

International Trade Affairs
Stefan Widomski

Nokia Country Management

U.S.

Olli-Pekka Kallasvuo

Mobile Phones

Kari-Pekka Wilska

Telecommunications

Jyrki Salo

Display Products

Jim Cookson

Finance, Control and Planning

Tuomo Alamäki (till May 31)

Kirsi Sormunen (as of June 1)

Human Resources

Eliane Hall

Business Development

John Malloy

Legal Affairs

Joe Pitts III

Communications

James Bowman

Industry Relations

William Plummer

Technology Standards

Christopher Wallace

China

Folke Ahlbäck

Country Management

Susan K. Fan

James C. Lin

Mobile Phones

Pertti Simovaara

Telecommunications

Malcolm Arnold

Finance and Control

Maarit Komulainen

Human Resources

Giam KimKhoon

Corporate Planning

Andrew Page

Legal Affairs

Mikko Harju

Communications

David Stoneham

Japan

Olav Stang

Country Management

Yasuharu Sekiguchi

Kimio Hashida

Infrastructure Functions

Jouko Päivinen

Account Management

Tooru Fukui

Finance and Control

Kaj Forsell

Human Resources

Juhani Hokkanen

Legal Affairs

Auli Luukkanen-Lääperi

Marketing and Communications

Fumihiko Fujimoto

Nokia Telecommunications

Sari Baldauf

Network Systems

Mikko Heikkonen

Switching Systems

Lauri Melamies

Mobile Switching

Sauli Salo

Fixed Switching

Aarne Sipilä

IN-Platform

Pertti Heinonen

Switching Platform

Keijo Olkkola

Wireless Data Server Systems

Pekka Salonoja

Network Management

Systems

Jorma Häkkinen

Service Management

and Integration

Mikael von Hertzen

Professional Mobile Radio

Tapio Heikkilä

System Development

Heikki Hämäläinen

System Marketing and Sales

René Svendsen-Tune

Radio Access Systems

J.T. Bergqvist

Operations and Logistics

Tapio Karjalainen

RAS Research

Tero Ojanperä

Technology Development

Tapio Harila

GSM Programs

Sakari Nikkanen

GPRS Business Program

Petri Pöyhönen

WCDMA BSS Business Program

Eero Vallström

System Development

Pekka Soini

System Marketing and Sales

Olli Oittinen

IP and Access Solutions

Kari Suneli

IP Solutions Group

Mika Vehviläinen

Security Solutions

Brian NeSmith

Fast Internet Solutions

Jussi Ilmarinen

IP Routing

Brian NeSmith

High Speed Access Products

Jerry Parrick

Sales and Marketing

Mark Bole

Narrowband Access Solutions

Markku Hynninen

Access and IP Nodes

Markku Hynninen

Regional Transport

Matti Peltola

Network Terminals

Olli Rissanen

Dedicated Networks

Hans Holmberg

Operations

Hemmi Piirainen

System Development

Rune Udd

System Marketing and Sales

Vesa Tykkyläinen

Customer Services

Pekka Oranen

Area Management – Europe

Pekka Vartiainen

Area Management – Southeast Asia
and Pacific

Kari Ahola

Area Management – Greater China

Malcolm Arnold

Area Management – North and

South America

Jyrki Salo

Legal Affairs and Intellectual**Property Rights**

Timo Ruikka (till March 31)

Kirsi Komi (as of April 1)

Finance and Control

Kirsi Sormunen (till May 31)

Riitta-Liisa Hiillos (as of June 1)

Strategy and Business Development

Juhani Sormanen

Quality and Processes

Kurt Engelvuori

Logistics

Tapio Karjalainen

Human Resources

Kirsi-Marja Kuivalainen

Communications

Arja Suominen

Nokia Mobile Phones

Matti Alahuhta

Americas

Kari-Pekka Wilska

Sales and Marketing, USA

Rich Geruson

Latin and South America

Sven Markelin

Canada

Al Gilchrist

Operations

Anssi Rätty

Logistics and Quality

John Robinson

Europe and Africa

Anssi Vanjoki

Sales

Bengt-Åke Gyllenberg,

Robert Andersson

Logistics & Operations

Raimo Puntala

Product Marketing

Jyrki Salminen

Marketing Services

Heikki Norta

Asia-Pacific

Nigel Litchfield

Sales

Urpo Karjalainen

Operations, Korea

Jae-Wook Lee

Operations, China

Lauri Rintanen

Logistics

Juha Räisänen

Product Marketing

Nigel Rundström

Japan

Olav Stang

China

Pertti Simovaara

Product Creation

Yrjö Neuvo

Product Programs

Pekka Valjus

Product Line Management

Søren Jenry Petersen

Wireless Data

Mikko Terho

Special Products

Hannu Huttunen

Advanced Development

Jouko Junkkari

Research & Technology

Heikki Huomo

New System Technologies

Heikki Ahava

PC Centre Management

Jouko Häyrynen

Global Operations and Logistics

Pertti Korhonen

Sourcing and Procurement

Jean-François Baril

Global Logistics

Juha Usva

Manufacturing Technology

Jorma Neuvonen

Finance and Control

Anja Korhonen

Human Resources

Juhani Hokkanen

Corporate Planning

Juha Putkiranta

Smart Traffic Products

Kalevi Kaartinen

Quality

Timo Hannukainen

Legal Affairs and Intellectual**Property Rights**

Urho Ilmonen

Communications

Tapio Hedman

Nokia Communications**Products**

Pekka Ala-Pietilä

Nokia Multimedia**Terminals**

Heikki Koskinen

Sales and Marketing

Stefan Majurin

Finance and Control

Steinar Døhlen

New Technology and**Operators**

Helmut Stein

Business Development

Ari Nieminen

Legal Affairs

Leif Rotkirch

Human Resources

Leena Salminen

Terminal products

Rickard Nelgér

Program and Project**Management**

Gerhard Wennerström

Strategic Purchasing

Jan Magnusson

Quality

Simo Salminen

Nokia Industrial Electronics

Hannu Suominen

Finance and Control

Asko Avoranta

Business Development

Lindy Yngvesson

Legal Affairs

Karin von Konow

Human Resources

Pekka Heinänen

Display Products

Reijo Lantto

Power Supplies

Kari Vuorialho

Nokia Ventures Organization

Pekka Ala-Pietilä

Wireless Business**Communications**

Reijo Paajanen,

Pekka Lundmark

IP Telephony

Kent Elliott

Wireless Software Solutions

Pertti Lounamaa

Operations and Business**Development**

Tuomo Alamäki

Business Development,**Internal Venturing**

Harry Santamäki

Ventures Fund

John Malloy

Legal Affairs and Intellectual**Property Rights**

Johan Schmidt

Nokia Research Center

Juhani Kuusi

Human Resources and**Administration**

Markku Valpas

International Co-operations

Simo Luiro

Communications

Hannu Markus

Press Releases

More on the Internet

Nokia published more than 300 global external press releases in 1998. The list here covers some of the major events.

Nokia press releases can be found on our website at www.nokia.com

Nokia's quarterly results in 1998 were published on April 24, on July 24, on October 23, 1998 and on January 25, 1999.

January

- 2** A turnkey site engineering project with Connect Austria for 1,000 base station sites.
- 7** Nokia as key supplier for Orange of UK in the accelerated rollout of its GSM network.
- 8** A new company, Wireless Application Protocol Forum Ltd. (WAP Forum), established.
- 8** Two new Nokia TDMA handsets introduced at the CES trade show in Las Vegas, USA.
- 8** A GSM network expansion for New World PCS Limited, Hong Kong SAR.
- 8** An order of more than 100,000 Nokia 909 ETACS phones from SMART Communications.
- 14** Business Week magazine: Nokia 9000i Communicator as one of "The Best New Products" of 1997.
- 14** Two new R&D units established in Budapest, Hungary.
- 16** Telstra of Australia to trial Nokia's TETRA digital trunked mobile system.
- 29** Nokia a major sponsor of "China: 5,000 Years" exhibition at the Guggenheim Museum in New York.

February

- 5** Expansion of ElTele Øst's trunked mobile radio system, based on the digital TETRA standard.
- 6** Provision of a mobile Intelligent Network (IN) for the BellSouth GSM network in New Zealand.

- 11** ISIS Multimedia Net GmbH in Germany selected Nokia for the supply of its SYNFFONET Access Node (SAN).
- 12** Record-breaking annual results for 1997.
- 17** Extension of Nokia's current agreement with Brightpoint, and the appointment of CellStar, as authorized distributors of Nokia phones and accessories in China.
- 17** Licensing agreement with Spyglass Inc for up-front web technology to be integrated in Nokia's next generation of digital cable, satellite and terrestrial set-top boxes.
- 17** Nokia Intelligent Frequency Hopping (IFH) solution introduced, the first of its kind in today's GSM market.
- 18** A cooperation agreement with Diamond Lane Communications Corporation, USA.
- 24** A frame agreement with SONOFON, the leading Danish GSM operator.
- 27** Omnitel of Lithuania to incorporate the new Nokia Mobile Switching Center into commercial traffic.

March

- 3** Nokia to sell its 50% ownership in Autoliv Nokia AB and other electronics operations in Motala, Sweden to the Swedish Autoliv.
- 8** Nokia awarded the "most significant UK contract" in its history for digital set-top boxes by British Digital Broadcasting (BDB).
- 12** Supply of GSM infrastructure equipment to Polkomtel S.A., Poland.

- 12** Frame agreement with Scottish Telecom covering the supply of all possible access network telecommunications infrastructure hardware and software solutions.
- 13** Nokia's DX 200 switching platform to launch Core Telecommunications Ltd's services in the UK.
- 16** Contract for the supply of GSM 1900 network equipment to Western PCS Corp. of USA.
- 18** 17 new products and solutions introduced at CeBIT '98 exhibition in Hannover, Germany.
- 18** "X-Files - The Movie," to portray Nokia's mobile phones in action.
- 18** Recommended Painting Scheme for Nokia's mobile phone covers announced.
- 18** The 20 millionth Nokia GSM phone in Europe sold in Stockholm, Sweden.
- 24** Dividend of FIM 7.50 per share for 1997 resolved at Nokia's AGM.
- 31** An addition to manufacturing complex in Reynosa, Mexico, for production of high-end computer monitors.
- April**
- 2** Nokia LPS-1 loopset announced, an accessory enabling a person who is hard on hearing to use a digital mobile phone.
- 6** Nokia was awarded a contract for GSM network expansion by the Henan Post and Telecommunications Administration (PTA), China.
- 7** Expansion of the UK mobile phone network operator Cellnet's GSM network.
- 7** Intelligent Network System (IN) and Mobile Switching Centre (MSC) for GLOBE TELECOM's GSM network in the Philippines.
- 8** Expansion of NingXia PTA's GSM network in China.
- 8** Global alliance with Computer Sciences Corporation (CSC) of USA to provide advanced, value-added services for Nokia's infrastructure customers.
- 16** Shipments of CDMA phones to Sprint PCS, USA began.
- 17** Synfonet SDH solution to Ji'An PTB, China.
- 20** Full turnkey dual band GSM 900/1800 network for diAx AG, Switzerland.
- 21** A commercial PCS service in several US states started, using Nokia GSM network equipment.
- 24** USD 100 million Nokia Ventures Fund announced to fuel future growth and to boost new product and long term business development.
- 24** Agreements for global contract manufacturing with U.S.-based SCI Systems, Inc.
- 27** Supply of an Actionnet trunked mobile radio and optical fibre transmission system to Morocco.
- 27** Digital terminals (the Nokia Mediamaster) for Reuters Television Network (RTV).
- 28** DX 220 digital switching platform for the new Hamburg city network in Germany.
- May**
- 6** New Nokia DX 200 switch, taken into commercial traffic by Lietuvos Telekomas, modernizes the telecommunications service for 40,000 subscribers in Lithuania.
- 7** A nationwide advertising campaign in Japan beginning May 11, in line with the market launch of a new PDC mobile phone terminal.
- 8** 25 Nokia 9000i Communicators to serve as key communications tools for the Massachusetts Institute of Technology (MIT) Sloan Challenge in USA.
- 11** Agreement between CTIN, Nokia and Optus in Australia for a joint two year research to analyze the deployment of improved data transmission capabilities in mobile communications.
- 12** Delivery of Nokia's Actionnet trunked mobile radio system to STARTEL-CTC, Chile.
- 15** Provision of fixed network solutions for the Daqing network in China.
- 18** Highly specified Nokia Mediamaster 9850 T, the company's first digital terrestrial set-top receiver, unveiled at Cable & Satellite '98 in the UK.
- 18** Free to air digital satellite receivers as a great-value data transfer medium to the UK Independent Radio News (IRN) network of commercial radio stations.
- 19** Synfonet STM-16 SDH equipment to Norway's Bane Tele.
- 20** Nokia and other major companies unveiled their vision to revolutionize wireless connectivity for personal and business mobile devices.
- 25** Online soccer World Cup 1998 results and information service in association with Time Inc. New Media and a number of European GSM operators.
- June**
- 1** Launch of the Nokia 6150 GSM 900/1800 dual band mobile

- phone, the smallest on the market.
- 2** New Nokia FlexiHopper Microwave Radio family introduced at CommunicAsia 98 in Singapore.
- 2** Nokia added two new solutions to the Nokia Artus Short Message Service Centre (SMSC).
- 3** Nokia 9000i Communicator received a 1998 World Class Award for the Best Wireless Communications Product category by PC World.
- 5** A new GSM customer in Kuwait, Mobile Telecommunications Co. (K.S.C.).
- 8** Announcement of a Nokia software competence center to be established in 1999 in Linköping, Sweden.
- 8** Extension of Turk Telekom's NMT 450 mobile telephone network in Turkey.
- 10** New manufacturing premises in Suzhou Industrial Park, in the Jiangsu province of China, to be established.
- 11** Fourth GSM network expansion to Zhejiang Mobile Communications Co., China.
- 12** A framework agreement between Nokia Research Center and Delft University of Technology to increase mutual research cooperation.
- 22** GSM network equipment to Iowa Wireless Services (IWS), L.P., USA for its PCS digital system.
- 24** Fifth expansion to Yunnan PTA's GSM network in China.
- 24** Synfonet SDH equipment to Austrian operator Well.COM Data Highway Burgenland GmbH for its new network.
- 24** Nokia, Ericsson and Psion to form a new joint venture called Symbian.
- 25** GSM Terminals Research and Development unit of Matra Nortel Communications bought in Ulm, Germany.
- 26** KNT Temporary Association – a consortium of Kreutler, Nokia and Telindus – chosen as sole supplier for Belgium's authority mobile radio network.
- July**
- 2** Nokia Synfonet SDH solution for German operator TelSA.
- 2** Equipment for Danish operator Mobilix' fixed network for combined fixed and mobile network services.
- 6** Product development, licensing and service agreement with UK-based AirCom International.
- 13** Nokia entered into a partnership with the Indian Institute of Technology (IIT), Delhi.
- 20** Phase five expansion of Globe Telecom's Handyphone service, the Mobile Telephone System (CMTS), based on GSM.
- 23** Delivery of HSCSD (High Speed Circuit Switched Data) solution to Sonera, Finland.
- 23** Complete telecommunications network to Teleos, Germany.
- 27** Agreement for the fifth expansion of MobileOne's GSM network in Singapore.
- 27** Mobile phone production to be expanded in Finland and Hungary.
- 29** Pioneering development of an innovative 58GHz radio link technology to help operators increase capacity in high-traffic mobile telecommunications networks.
- 31** Nationwide Actionet trunked mobile radio system to Argentina Wireless Telecommunications (AWT).
- August**
- 3** Nokia 5190, an affordable GSM 1900 digital PCS handset introduced in the USA.
- 5** Expansion of North-West GSM's GSM network in St Petersburg, Russia.
- 20** Swedish software company U&D acquired.
- 31** Supply of a turnkey GSM network to Corporacion Digital C.A. in Venezuela.
- September**
- 2** Further supply of Nokia's DX 200 switches to expand Redstone's network in the UK.
- 3** First trial call with a Nokia-made WCDMA terminal on NTT DoCoMo's trial specification successfully completed.
- 7** Nokia's DX 200 switching platform to enhance existing network of Cable and Wireless Communications in the UK.
- 8** First Nokia-developed car telematics products will be available in the vehicles of several leading manufacturers during 1999.
- 10** Nokia's High Speed Circuit Switched Data (HSCSD) technology illustrated with a live demonstration at test network in Helsinki, Finland.
- 11** Members of Swedish pop music band Ace of Base received new Nokia 8810 mobile phones.
- 15** Supply of Nokia's Actionet trunked mobile radio system to Transcom Inc., Taiwan.
- 23** Nokia raises subscriber estimates

to about one billion subscribers in the year 2005.

- 23** New Telecoil (T-coil) hearing aid compatible accessory working with Nokia 5100 or 6100 digital wireless phones introduced at PCS'98.
- 23** Nokia Traffica, a real-time traffic monitoring tool, introduced at PCS'98 in Florida.
- 28** Delivered subscriber line capacity on Nokia GSM networks in China broke the 10 million barrier.
- 29** Nokia, ChongQing TB and ChongQing PTAC form new joint venture in China.
- 30** Nokia became long term title sponsor for the FIS Snowboard World Cup.

October

- 1** Supply agreement of complete SDH transport and access networks to the eight largest cities in Brazil.
- 2** Nokia joins Global Mobile Suppliers Association, worldwide industry organization to promote GSM.
- 5** One of Nokia's fastest ever network roll-outs completed: 2 000 base stations installed in 10 months for E2 network in Germany.
- 6** Nokia Internet Firewall solutions chosen by UUNET, Germany.
- 7** First TETRA mobile radio network in Austria implemented for the operator Well.COM.
- 16** BPL Mobile launched the first speech quality enhancing GSM network in India, using Nokia EFR technology.
- 22** New Nokia RinGo for ETACS networks introduced.

26 Nokia Hepingli Industrial Park opened in Beijing, China.

- 26** Bluetooth mobile wireless communications initiative gains broad industry support with more than 200 companies joining.
- 28** Digital terrestrial tv launched in Sweden with Teracom and Senda.
- 29** Nokia to Donate 1000 Phones to Texas high schools.

November

- 2** The world's smallest NMT 450 phone launched.
- 3** Nokia to supply the first dual band GSM network in the Philippines.
- 6** A new mobile phone for the Japanese PDC standard introduced.
- 6** Fixed and mobile services for StarHub, Singapore, with Nokia's fully integrated solution.
- 20** Working digital terrestrial box demonstrated to key audience in London.
- 25** Nokia delivered world's first ETSI standard ADSL and IP network to Telecom New Zealand.
- 26** Hongkong Telecom launched dual band GSM network, supplied by Nokia including Nokia's Intelligent Frequency Hopping solution.
- 26** STM-16 technology to ISIS Multimedia Net GmbH, Germany for network expansion.

December

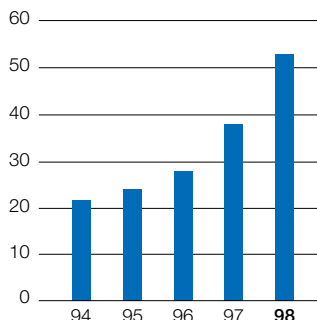
- 3** Nokia manufactures its 100 millionth mobile phone, the Nokia 9110 Communicator, in Salo, Finland.

3 Nokia meets analysts in London.

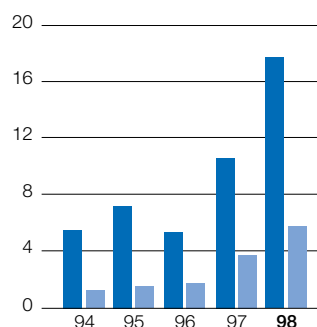
- 4** Complete GSM 1800 cellular network to Telekom Cellular, Malaysia.
- 7** HSCSD solution to Hongkong Telecom for advanced GSM data services.
- 14** Nokia to supply SOL Communications, USA with complete GSM network.
- 15** Nokia's High Speed Data solution and GSM network expansion to New World PCS, Hong Kong.
- 18** Nokia's expertise in IP telephony strengthened by the acquisition of Vienna Systems Corporation, Canada.
- 21** Investments in mobile phone production capacity expansions in Bochum, Germany.
- 21** Nokia signs millennium sponsorship deal with CNN International.
- 28** Nokia transfers its treasury stock from the Netherlands to Finland.

Nokia Shares

Shareholder's equity per share, FIM

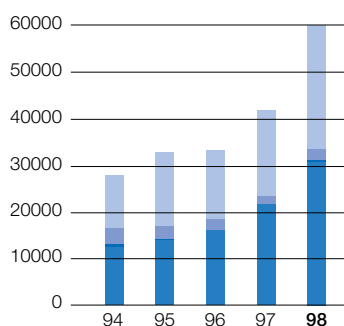


Earnings and dividend per share, FIM



■ Earnings
■ Dividend

Shareholders' equity and liabilities, MFIM



■ Shareholders' equity
■ Minority interests
■ Long term liabilities
■ Current liabilities

Shares and voting rights

Nokia has two classes of shares, A shares and K shares.¹⁾ 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.

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 was FIM 1 513 991 410 and the total number of votes 1 748 873 269.

Conversion of K shares into A shares

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, a 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 number of 201 755 383 K shares had been converted into A shares and 7 030 745 could still be converted. Thus the total number of shares was 605 596 564 of which 478 565 819 were A shares and 127 030 745 K shares.

Changes to be proposed to Annual General Meeting 1999

The Board of Directors proposes to the Annual General Meeting on March 17, 1999 that the classes of shares be consolidated. After consolidation all shares entitle to one (1) vote and an equal dividend, corresponding to the right of the A shares as described above.

The Board also proposes a conversion of the share capital and the nominal value of shares into euros and a two-for-one split of the nominal value. The new nominal value to be proposed is 24 cents.

Attending and voting at General Meeting

The shares of Nokia are registered in the book-entry securities system. By December 31, 1998, a total number of 99.9 per cent of Nokia shares had been transferred to this system.

If an international depositary receipt has been issued for a book-entry share or is owned by a foreign person or legal entity the custodian commissioned to administer the book-entry shares may be entered as a nominee in the register of shareholders. The custodian may also be e.g. an administrator of book-entry register a foreign organization approved by Finnish Central Securities Depositary Ltd to act as a custodian.

1) At the Annual General Meeting held on March 30, 1995, Nokia's shareholders resolved to rename Nokia shares as A shares, previously preferred shares, and K shares, previously common shares. In connection with that it was resolved to reduce the nominal value of each class of Nokia shares from FIM 20 to FIM 5 through a four-for-one stock split. The split was effected on April 24, 1995.

Share capital and shares, Dec. 31 ¹⁾	1998	1997	1996	1995	1994
Share capital, MFIM					
K (common) ²⁾	318	393	499	547	721
A (preferred) ²⁾	1 196	1 106	999	951	777
Total	1 514	1 499	1 498	1 498	1 498
Share capital, MEUR					
K (common)	54	66	84	92	121
A (preferred)	201	186	168	160	131
Total	255	252	252	252	252
Shares (1 000, nominal value FIM 2.50)					
K (common)	127 031	157 374	199 426	218 754	288 396
A (preferred)	478 566	442 330	399 674	380 346	310 704
Total	605 597	599 704	599 100	599 100	599 100
Shares owned by the Group at year-end (1 000)	32 161	32 161	32 562	30 362	29 962
Number of shares excl. shares owned by the Group at year-end (1 000)	573 436	567 543	566 538	568 738	569 138
Average number of shares excl. shares owned by the Group during the year (1 000)	569 170	566 564	567 122	569 134	545 858
Number of registered shareholders ³⁾	30 339	28 596	26 160	27 466	24 770
Key Ratios Dec. 31, IAS	1998	1997	1996	1995	1994
Earnings per share from continuing operations, basic					
Earnings per share, FIM	17.56	10.59	5.37	7.18	5.49
Earnings per share, EUR	2.95	1.78	0.90	1.21	0.92
P/E ratio					
K (common)	35.3	18.4	24.8	12.0	15.9
A (preferred)	35.3	18.3	24.9	11.9	15.9
(Nominal) dividend per share, FIM	5.75 ⁴⁾	3.75	1.75	1.50	1.25
Total dividends, MFIM	3 482 ⁴⁾	2 249	1 048	899	749
Payout ratio	0.33	0.35	0.33	0.21	0.23
(Nominal) dividend per share, EUR	0.97 ⁴⁾	0.63	0.29	0.25	0.21
Total dividends, MEUR	586 ⁴⁾	378	176	151	126
Dividend yield, per cent					
K (common)	0.9	1.9	1.3	1.7	1.4
A (preferred)	0.9	1.9	1.3	1.8	1.4
Shareholders' equity per share, FIM	52.98	37.92	28.12	24.27	21.82
Market capitalization, MFIM ⁵⁾	355 530	110 014	75 547	48 724	49 657
Shareholders' equity per share, EUR	8.91	6.38	4.73	4.08	3.67
Market capitalization, MEUR ⁵⁾	59 796	18 503	12 706	8 195	8 352

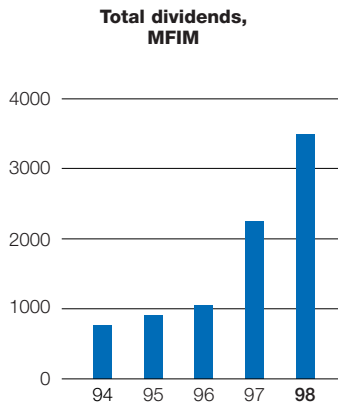
1) All figures are split adjusted.

2) See footnote 1 on page 48.

3) Each nominee register is included in the figure as only one registered shareholder.

4) Proposed by the Board of Directors.

5) Shares owned by the Group are excluded.



On December 31, 1998, Nokia shares registered in the name of a nominee accounted for 76.5 per cent of the total number of shares and for 23.5 per cent of the total number of voting rights.

To attend and vote at a General Meeting, a shareholder must be registered in the register of shareholders. 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 is not entitled to vote with such shares unless he arranges to have his name entered in the register of shareholders.

Dividend policy

Dividends are paid by Nokia in accordance with the Finnish Companies Act. The amount of dividend is based upon and calculated in relation to the level of Nokia's annual profit. There is, however, no formula according to which the amount of dividend is determined.

The intention of Nokia is that the dividend paid should, over the long term, reflect the development of the Group's earnings per share.

Effect of imputation system

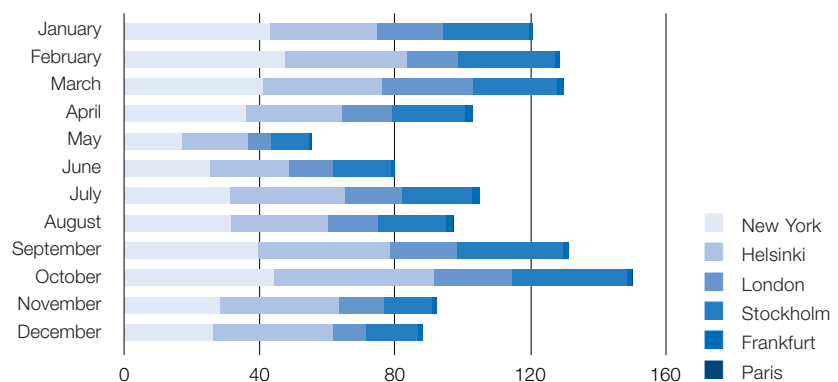
The imputation system (avoir fiscal) will apply to the 1998 dividends payable by Nokia. Any Finnish company, when paying dividends to its shareholders, is required to pay tax amounting to a minimum of 7/18 of the dividend. A resident of Finland, receiving dividends from a Finnish company, is entitled to tax credit amounting to 7/18 of the dividend. As the dividend for 1998 is proposed by the Board of Directors to be FIM 5.75 per share, the tax credit thus amounts to FIM 2.24 thereby increasing the shareholder's profit to FIM 7.99, taxable at 28 per cent.

The credit is granted to non-resident shareholders only when an existing tax treaty between Finland and the shareholders' resident country specifically includes a provision of the credit. According to a tax treaty, a resident of the Republic of Ireland is entitled to a partial tax credit.

Listing and turnover on stock exchanges

Nokia shares have been listed on the Helsinki Exchanges since 1915. The A shares are also listed in Stockholm (since 1983), London (since 1987), Paris (since 1988), Frankfurt am Main (since 1988) and New York (since 1994). Nokia A shares are traded on the New York Stock Exchange (NYSE) in the form of American Depositary Shares (ADSs) and evidenced by American Depositary Receipts (ADRs). The ADRs are issued by Citibank, N.A., acting as the Depositary Bank, upon deposit of A shares or evidence of rights to receive A shares with the Depositary. Each ADS represents one A share.

Volumes of Nokia A shares traded in 1998
1 000 000 shares



Share Issues 1994–1998 ¹⁾

Type of issue	Subscription date	Subscription price	Number of new A shares	Date of payment	Net proceeds MFIM	New share capital MFIM	Share capital after issue MFIM
Global Offering	July 1, 1994 and July 6, 1994	FIM 52.3 and USD 9.8	48 000 000	July 11, 1994	2 490.3	120	1 498
Nokia Stock Option Plan 1994	1998	FIM 46.75	33 504	1998	1.6	0.1	1 499
Nokia Stock Option Plan 1995	1997	FIM 84.00	290 800	1997	24.4	0.7	1 498
	1998	FIM 84.00	3 788 000	1998	318.2	9.5	1 509
Nokia Stock Option Plan 1997	1997	FIM 153.50	313 552	1997	48.1	0.8	1 499
	1998	FIM 153.50	2 070 748	1998	317.9	5.2	1 514

Share turnover (all stock exchanges) ²⁾

1000 shares	1998	1997	1996	1995	1994
K share turnover	63 777	49 658	135 234	199 742	308 328
Total number of K shares	127 031	157 374	199 426	218 754	288 396
Per cent of total number of K shares	50	32	68	91	107
A share turnover	1 282 039	1 303 052	1 520 758	1 285 426	693 072
Total number of A shares	478 566	442 330	399 674	380 346	310 704
Per cent of total number of A shares	268	295	380	338	223

Share prices, FIM

(Helsinki Exchanges)	1998	1997	1996	1995	1994
K share					
Low/high	184/638	130/273	73/134	69/170	36/89
Average ³⁾	489	176	94	111	60
Year-end	620	195	133	86	87
A share					
Low/high	185/638	131/274	73/134	69/170	36/89
Average ³⁾	378	196	95	110	62
Year-end	620	194	134	85	87

Share prices, USD

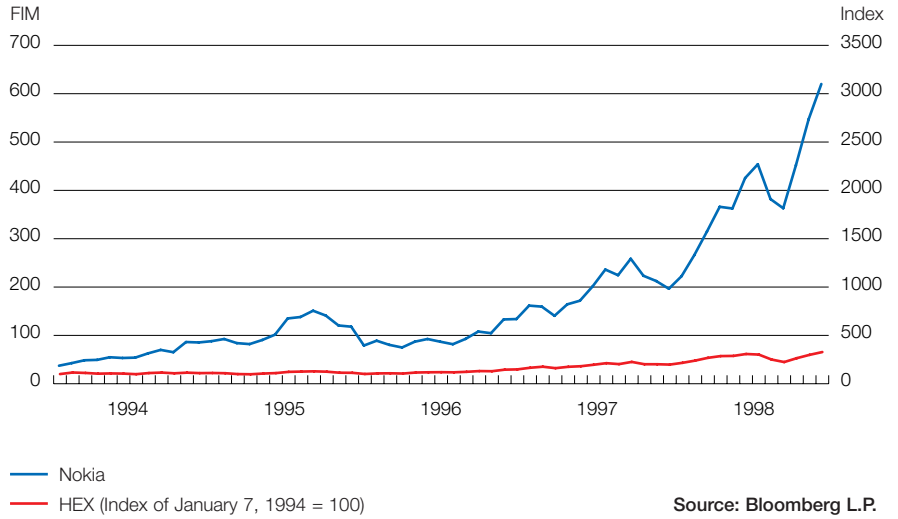
(New York Stock Exchange)	1998	1997	1996	1995	1994
ADS					
Low/high	34/125	28/51	16/29	16/38	11/19
Average ³⁾	68	37	20	24	16
Year-end	120	35	29	20	19

1) Prices and numbers of shares have been recalculated to correspond the nominal value of FIM 2.50 of the shares.

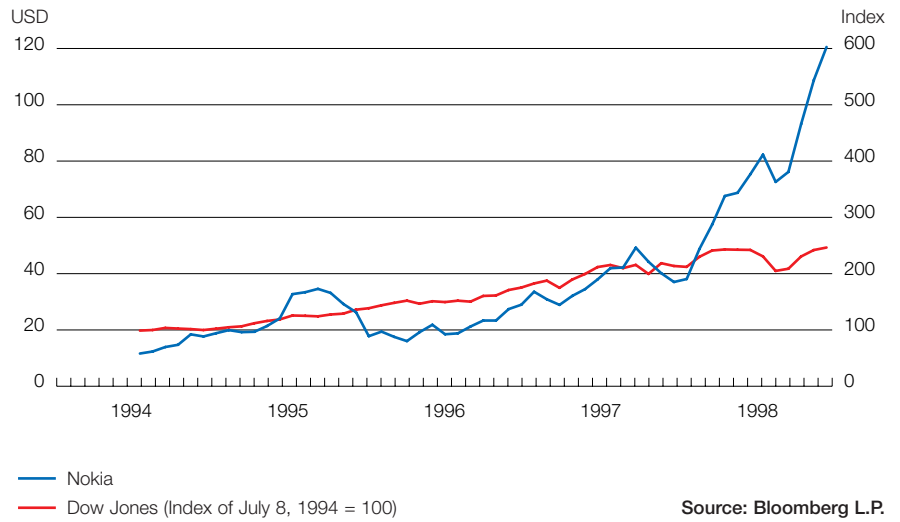
2) Based on the outstanding number of shares on December 31, 1998.

3) Calculated by weighing average price of each day with daily trading volumes.

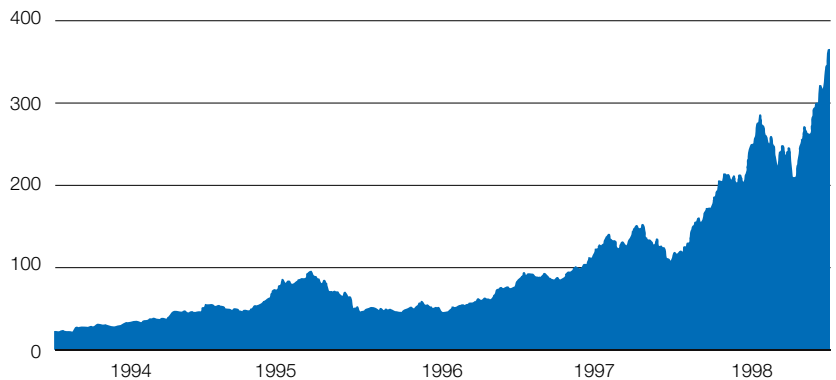
Nokia A share price in Helsinki and HEX index



Nokia ADS price in New York and Dow Jones index



Nokia market capitalization in 1994–1998, FIM billion



Source: Bloomberg L.P.

Volumes of A shares traded in 1998:¹⁾

New York ³⁾	410 041 900
Helsinki	394 082 150
Stockholm	264 042 157
London	192 937 597
Frankfurt	19 388 054
Paris	1 547 361
In total	1 282 039 219

Volumes of A shares traded in 1997:¹⁾²⁾

New York ³⁾	515 844 200
Helsinki	342 761 314
Stockholm	193 741 494
London	237 214 864
Frankfurt	11 591 122
Paris	1 898 518
In total	1 303 051 512

1) Source: Bloomberg L.P. 2) Split adjusted. 3) In the form of ADSs.

Nokia Dividend Reinvestment and Direct Purchase Plan

A Dividend Reinvestment and Direct Purchase Plan (the Plan) for ADSs of Nokia was implemented in December, 1997. The Plan is designed to provide owners of ADSs and other interested investors who participate in the Plan 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 Plan is not available to persons located outside the United States.

The Plan is sponsored and administered by the Depositary Bank, Citibank, N.A. Nokia has consented to the establishment of the Plan by the Depositary Bank, but does not, and should not be deemed to, sponsor or administer the Plan. Nokia assumes no obligation or liability for the operation of the Plan.

Nokia Stock Option Plans

As part of its incentive schemes to the management and key personnel at the end of 1998 Nokia had three stock option plans in the form of bonds with warrants.

In 1994 the Annual General Meeting approved an issue of bonds with warrants to certain members of the Nokia management (Nokia Stock Option Plan 1994). Each warrant attached to the bonds is exercisable at FIM 374 for eight A shares from December 1, 1998 to January 31, 2000. This stock option plan covers approximately 50 persons who are entitled to subscribe for max. 1 600 000 A shares in aggregate.

In 1995 the Annual General Meeting approved an issue of bonds with A and B warrants to certain members of the management of the Nokia Group (Nokia Stock Option Plan 1995). Each warrant attached to the bonds is exercisable at FIM 168 for two A shares during certain periods of time between December 1, 1997 and January 31, 2001. This stock option plan covers approximately 350 persons who are entitled to subscribe for max. 11 600 000 A shares in aggregate.

In 1997 the Annual General Meeting approved an issue of bonds with A, B and C warrants to key personnel of the Nokia Group (Nokia Stock Option Plan 1997). Each warrant attached to the bonds is exercisable at FIM 307 for two A shares during certain periods of time between December 1, 1997 and January 31, 2003. This stock option plan covers approximately 2 000 persons who are entitled to subscribe for max. 19 000 000 A shares in aggregate.

By December 31, 1998 the exercise of 3 235 738 warrants in aggregate under the Stock Option Plans resulted in the issue of 6 496 606 new A shares in aggregate and increase of Nokia share capital with FIM 16 241 515 in aggregate.

Further information

A reference is made to section Nokia shares and shareholders in Nokia's Financial Review on pages 27–31 for further details.

Splits of the nominal value of Nokia shares

	Nominal value of shares before (FIM)	Split ratio	Nominal value of shares after (FIM)	Effective date
1986	100	5:1	20	January 2, 1987
1995	20	4:1	5	April 24, 1995
1998	5	2:1	2.5	April 16, 1998

Contact us

More on the Internet

All addresses can be found
on our website
[www.nokia.com/company/
addresses](http://www.nokia.com/company/addresses)

NOKIA

Keilalahdentie 4
P.O. Box 226
FIN-00045 NOKIA GROUP
Tel. +358 9 180 71
Fax +358 9 652 409
e-mail: communications.corporate@nokia.com
www.nokia.com

Nokia Telecommunications

Keilalahdentie 4
P.O. Box 300
FIN-00045 NOKIA GROUP
Tel. +358 9 511 21
Fax +358 9 5112 5560

Nokia Mobile Phones

Keilalahdentie 4
P.O. Box 100
FIN-00045 NOKIA GROUP
Tel. +358 10 5051
Fax +358 10 505 5768

Nokia Communications Products

Keilalahdentie 4
P.O. Box 226
FIN-00045 NOKIA GROUP
Tel. +358 9 180 71
Fax +358 9 656 388

Nokia Multimedia Terminals

Keilalahdentie 4
P.O. Box 226
FIN-00045 NOKIA GROUP
Tel. +358 9 180 71
Fax +358 9 646 712

Nokia Industrial Electronics

Salorankatu 5-7
P.O. Box 14
FIN-24101 SALO
Tel. +358 2 7711
Fax +358 2 771 2024

Nokia Ventures Organization

Keilalahdentie 4
P.O. Box 226
FIN-00045 NOKIA GROUP
Tel. +358 9 180 71
Fax +358 9 1807 803

Nokia Research Center

Itämerenkatu 11-13
P.O. Box 407
FIN-00045 NOKIA GROUP
Tel. +358 9 437 61
Fax +358 9 437 66227

Investor Information

Annual General Meeting

Date: Wednesday, March 17, 1999, at 3 p.m. (March 24 in 1998)

Place: Helsinki Fair Centre, Congress Hall C 1, Rautatieläisenkatu 3, Helsinki, Finland.

Dividend

Dividend proposed by the Board of Directors for 1998 is FIM 5.75. The dividend record date is March 22, 1999. Dividends will be paid after March 30, 1999.

Stock Exchanges

The shares of Nokia Corporation are quoted on the following stock exchanges:

	Symbol	Trading currency
Helsingin Arvopaperipörssi (quoted since 1915)	NOKAV	EUR
Stockholms Fondbörs (1983)	NOKI A	SEK
London Stock Exchange (1987)	NY	EUR
Frankfurter Wertpapierbörse (1988)	NOAD	EUR
Bourse de Paris (1988)	5838	EUR
New York Stock Exchange (1994)	NOKA	USD

List of indices

NOKAV

HEX	HEX General Index
HEXTELE	HEX Telecommunications Index
HEX20	HEX 20 Index
BE500	Bloomberg Europe
BETECH	BBG Europe Technology
SX5E	DJ Euro STOXX 50
SX5P	DJ Europe STOXX
SX__	Various Other DJ Indices

NOKI A

OMX	Stockholm
GENX	Swedish General
GENX04	Swedish Engineer
GENX16	Swedish SX 16 Index

NOKA

NYA	NYSE Composite
NNA	NYSE Utilities
NN	NYSE Utilities
VLA	Phila Value Line
MLO	Merrill Lynch 10

Financial reporting

Nokia's quarterly interim reports in 1999 are due on April 22, July 22 and October 21. The 1999 results will be published in January/February 2000 and the Annual Report for 1999 in March 2000. The reports are published in English, Finnish and Swedish.

Investor Relations contacts

Nokia Investor Relations
6000 Connection Drive
IRVING, Texas 75039
USA
Tel. +1 972 894 4880
Fax +1 972 894 4831

Nokia Investor Relations
P.O. Box 226
FIN-00045 NOKIA GROUP
Finland
Tel. +358 9 180 7289
Fax +358 9 176 406

Information via the Internet

Web users can access Nokia's annual reports and quarterly reports, as well as other Nokia's financial information and press releases through www.nokia.com.

Abbreviations

ADSL	Asymmetric Digital Subscriber Line	ISM	Industry, Scientific and Medical
AMPS	Advanced Mobile Phone Service	ISP	Internet Service Provider
AMR	Adaptive Multi-Rate	ITU	International Telecommunication Union
ATM	Asynchronous Transfer Mode	LAN	Local Access Network
CDMA	Code Division Multiple Access	MSC	Mobile Switching Center
DSL	Digital Subscriber Line	PMR	Professional Mobile Radio
DVB	Digital Video Broadcasting	SDH	Synchronous Digital Hierarchy
EDGE	Enhanced Data Rates for GSM Evolution	TDMA	Time Division Multiple Access
ETSI	European Telecommunications Standards Institute	TETRA	Terrestrial Trunked Radio
GPRS	General Packet Radio Service	UMTS	Universal Mobile Telecommunications System
HSCSD	High-Speed Circuit Switched Data	UWS	Universal Wireless Communications
IN	Intelligent Network	WAP	Wireless Application Protocol
IP	Internet Protocol	WCDMA	Wideband Code Division Multiple Access
IPSO	Nokia Routing operating system	WDM	Wavelength Division Multiplexing

It should be noted that certain statements herein which are not historical facts, including, without limitation those regarding 1) the timing of product deliveries; 2) Nokia's ability to develop new products and technologies; 3) expectation regarding market growth and developments; 4) expectations for growth and profitability; 5) the impact of Year 2000 issues (including the extent and timing of such issues, and the costs of compliance); and 6) 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 1) general economic conditions, such as the rate of economic growth in the Company's principal geographic markets or fluctuations in exchange rates; 2) industry conditions, such as the strength of product demand, the intensity of competitions, 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; 3) operating factors, such as continued success of manufacturing activities and the achievement of efficiencies therein, continued success of products development or inventory risks due to shifts in market demand; 4) 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 5) the risk factors specified in the Company's Form 20-F for the year ended December 31, 1997.



© Nokia 1999. Nokia is a registered trademark of Nokia Corporation.

Graphic design Oddball Graphics Photographs Hannu Bask and Nokia's photo archives Printed by Sävyaino ISO 9002, 1999

NOKIA
CONNECTING PEOPLE

www.nokia.com

