

Strategy of Customisation - A Case of Nokia

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ABSTRACT

Nokia is a global leader of mobile communication. It owned 38% of the world mobile handset market in 2003. Its strategy was to take competitive advantage through customisation, collaboration, globalisation and innovations. Nokia has established their cutting edge technology and trend setting lifestyle in their mobile handset products. Nokia adopted strategy of mergers, acquisitions, alliance and collaboration to gain superiority in technology and competitive advantage. Nokia worked on cooperative ventures like WAP forum to leverage their competitiveness in Internet services. It had founded symbian to step up the evolution of wireless information devices. Jorma Ollila restructured the company to cope up with fall in net sales in 2003. The restructure was to capture global market by exploiting economies of scale in mobile handsets, to focus on such functions as imaging, games, media and a range of other attractive contents in multimedia sector. Enterprise solutions offered a wide range of mobile devices and secured mobile connectivity solutions to enterprise.

STRATEGY OF CUSTOMISATION A CASE OF NOKIA¹

Nokia is the global leader in mobile communications. Nokia owned 38% of the world mobile handset market in 2003. It has sold around 179 million mobile phones in 2003. It had the highest net sales in Europe, Middle-East & Africa (57%) followed by the Americas (21%) and Asia Pacific (24%). Nokia's total employment was 51359 in 2003.

The mobile communication industry has emerged in 1980s and has grown very fast in 1990s. The major players in the industry are Nokia of Finland, Motorola of USA, Ericsson of Sweden, Siemens of Germany and Alcatel of France. The industry was attracted by other electronic giants such as LG, Samsung, Panasonic, Mitsubishi, Sony etc. as it has got high growth potential and profitability.

BRIEF HISTORY OF NOKIA

From its inception, Nokia was in the communications business as a manufacturer of paper – the original communications medium. Nokia starts in 1865 as a lumber mill on the banks of the Nokia river. The process of Nokia's transformation from staid old conglomerate into one of the world's most relentlessly focussed consumer technology company was very fast.

Nokia was formed in 1966 through a merger of three companies: Pulp and Paper, Tyres and Cables and Paper Manufacturing. During 1970's, Nokia started to diversify its business through expansion in different electronic product areas. Mobile Telephony did not exist as such, but Nokia was already a leading player in radiotelephones. After the oil shock of 1973, Nokia experienced strategic problems in its traditional products. The then CEO, Kari Kairamo set out future goal of the company as globalisation, innovation and customisation, increase the share of high tech products and maintain the competitiveness of its traditional products like paper, tyres and cables. In order to increase the share of high tech products, Nokia diversified into consumer electronics and computers. Nokia has got a golden opportunity to enter high tech product when Finish army invited in the electronics industry to develop a new type of portable radio telephones. Nokia got the order alongwith Salora and Televa. Later Nokia formed Mobira – a joint venture with Salora, which later became a fully subsidiary of Nokia. It also acquired Televa and became a global leader in mobile phone.

Nokia's major strategy in business is globalisation, innovation and customisation of their business. Nokia acquired Salora and Luxor in 1984 for supplementing the

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¹ The case was compiled exclusively based on secondary sources such as nokia.com, Business Source Premier, ISI Emerging Markets, capitaline etc.

competence in R & D and small-scale production with mass production and market orientations. The CEO Kari Kairamo saw this acquisition as a step in further global cooperation. Later in 1986, Nokia integrated Salora and Luxor with 100% ownership.

After the demise of Kari Kairamo in December 1989, Jorma Ollila, an economist, became the new CEO of Nokia in 1992. Jorma Ollila was a successful President of Nokia Mobile Phones. His strategy was the fastest growth, the productive investments and better results in Nokia's telecommunications sector. Nokia's strategy was to invest in telecommunications and closely associated business operations. It had focussed on industry segments and geographic regions that had good opportunities for growth and profitability.

In pursuit of their new strategy, Nokia divested cables and machinery business in 1993 and 1995. In 1996, it had completely divested consumer electronics business to Semi-Tech (Global) subsidiary of Toronto. After these moves, Nokia has operations only in the telecommunications and mobile telephone industry.

BUSINESSES OF NOKIA

Nokia comprised of three business groups : Nokia Networks, Nokia Mobile phones and Nokia Communications products. In addition Nokia included a separate Nokia Ventures Organisation and Nokia Research Centre.

Under Nokia Networks, Nokia supplied mobile, broad-band and IP infrastructure for both analog and digital networks. The network products included switching, transmission, network management and intelligent network (IN) solutions. These products were designed to meet the diverse needs of wireless fixed and convergent environments. Nokia networks were modular in design and were inherently flexible.

Nokia Mobile Phones was the world's largest manufacturer of mobile phones with a brand identity. They developed sophisticated mobile phones and accessories for all major analog and digital (GSM, AMPS, CDMA, TDMA) standards. Nokia phones are stylish and beautiful with high quality.

Nokia communications products consisted of Nokia multimedia terminals and Nokia Industrial Electronics. Nokia multimedia terminal supplied terminals designed for

reception of digital broadcasting and multimedia applications. Nokia multimedia terminals collaborated closely with program and content providers worldwide to offer consumers attractive products and services such as online education, entertainment and shopping. Nokia industrial electronics supplied high end large computer and workstation monitors. They produced their products with picture quality, ergonomic design and user friendliness. Nokia multimedia terminals offered user-friendly digital multimedia terminals. Reception options included satellite, cable and terrestrial models. Nokia's expertise in satellite receiver technology and its pioneering role in multimedia reflected its history of innovation in the field. They developed the first digital multimedia terminal in the world.

Nokia Venture Organisation developed innovative new ideas for the home environment and the corporate world, expanding Nokia's business scope into promising new areas in telecommunications and data communications solutions, products and services. Nokia Ventures Organisation included Nokia Internet Communications, Nokia Ventures Fund and an internal venturing unit. Nokia Internet Communications consisted of Nokia Wireless Business Communications, Nokia Wireless Software Solutions and Nokia IP application and connectivity platform. Nokia Wireless Business Communications developed enterprise solutions like Nokia Wireless LAN products and IP Telephony solutions. Nokia IP Application and connectivity platforms offered world class routing capabilities with security and mobility applications.

Nokia Research Centre covered full range of activities from the exploration of new technologies and concepts to the development of actual products that fulfilled consumer's needs. Nokia had collaboration with the media lab at MIT. Nokia also had cooperation with other business groups, universities and research institutes.

GROWTH STRATEGY

When Jorma Ollila had taken over as CEO of the company in 1992, the company was incurring huge losses. This was mainly because Nokia had failed to cope up with growth and diversity. Jorma Ollila wanted to turn around the company. He got full support from the board to restructure the Organisation. He divested all of Nokia's business outside of Telecommunications. He inducted young and energetic managers to take the company to higher level.

He appointed Pekka Ala-Pietila as President of Nokia Mobile Phones. Dr. Matti Alahuhta, a scientist from Helsinki University of Technology was chosen as president of Nokia Telecommunications. Sari Baldauf, a MBA of Helsinki was made the president of Cellular Systems of Nokia Telecommunications. Olli-Pekka Kallasvuo was made chief finance officer (CFO) of the company. Mikko Kosonen was given the charge of Corporate Planning. Ollila created a dynamic team to give a new direction to the company.

Mikko Kosonen, the vice president of Corporate Planning had adopted customization of product as the company's major thrust of Strategy. This has given the company an impetus to emphasize on innovation. He designed a new strategy to take the global challenges by focussing on niche markets. Through niche market segment it was planned to gain access the entire global market.

Jorma Ollila inculcated new cultural values in the company such as customer satisfaction, innovation, performance and recognition of employees.

Jorma Ollila had set up an ambitious growth strategy of fast growth and productive investment. He wanted to exploit the new standards for digital mobile telecommunications GSM (Global System for Mobile Telecommunications) available at the time and was successful to launch operational network to the digital standard. He distinguished customer segments according to their needs and applied appropriate technology to suit the market.

The convergence of the Internet, mobile telecommunications and personalization of services made a paradigm shift in mobile communications system. This resulted in emergence of different wireless protocols – from Wireless Applications Protocol (WAP), GPRS (General packet Radio Services), GSM (Global System of Mobile Communications), Bluetooth to 3G (Third Generation).

Nokia launched several products that combined mobile internet infrastructure solutions, which included Nokia mPlatform, WCDMA base stations, Nokia Common Radio Resource Management Solutions, etc. The Nokia mPlatform provided operators with a new dimension to their existing value added portfolio allowing mobile subscribers greater access to personally relevant services such as weather reports, traffic conditions, restaurant reservation, theatre and cinema ticketing and emergency services. Nokia developed and delivered the world's first integrated TETRA Voice and IP Packet Data System, 800 MHz

TETRA System, etc. They launched Mobile Operator Wireless LAN for operators to offer secure high speed data services, bringing access to cooperate networks and the internet from locations such as the office, airport and hotel.

Nokia has established their cutting edge technology and trend setting lifestyle offerings while unveiling their mobile handset products. Their products Nokia 3310, Nokia 3330, Nokia 8210, Nokia 8250, Nokia 8850 and Nokia 8850 the gold edition all incorporated innovative and personalisation features. It unveiled Nokia 8260, which has got the features of personalised style and innovative design with advanced wireless solutions. Nokia 3330 offered a host of personalisation features such as a new game, an animated screen saver, a new "first vibrate, then ring" option and SMS chat. Nokia 8850 the golden editions introduced with a white LED screen for exceptional styling. Nokia also unveiled the digital Nokia Music Player HDR I allowing users to listen to an integrated FM stereo radio and downloadable audio/music files. Nokia unveiled Nokia 8310 GPRS phones with WAP, Nokia 9210 with features of full-colour display high speed Internet Access and digital imaging capabilities. It was also compatible with Microsoft Windows. Nokia 6310 featured WAP over GPRS enabling "always on" connectivity and featuring both SyncML and Bluetooth capabilities. It has launched a fancy new mobile phone personal digital assistant hybrid product called the 9210 communicator. From its inception, Nokia continued to expand into new product markets, taking advantage of new technologies to create market share. The ability to stay on top of technological advances was a key factor to the company's success.

In 3G services, Nokia would give e-mail, weather information maps, route planning, traffic information, bank account data, news and travel information. With the introduction of Mobile Internet Technical Architecture, Nokia brought a wide range of new mobile business to their customers and developing a far more user-friendly experience in electronic services for every one.

Nokia brought technologies such as wideband CDMA (Code Division Multiple Access) as the mobile moved towards third generation (3G) services which themselves depended on Internet Protocol. Nokia established a 3G applications centre in Hong Kong to help local industry develop end-to-end mobile multimedia applications. Nokia Networks announced the Nokia Active Segment Solution for secure mobile e-commerce services and business-to-business

transactions to corporate customers, especially financial institutions and banks.

Nokia introduced in their mobile phones new features, functions and services such as games, music, imaging, etc. They introduced visa branded payment services for Visa Cardholders in Asia – Pacific that enabled consumers to make purchases by a simple 'click' on an Internet mobile phone. This service would leverage on Nokia's network and expertise and Visa's global e-commerce initiatives for security and authentication. Nokia offered their customers Lotus Mobile Notes for messaging, collaboration and e-mail.

Nokia had launched 40 new products with models of colour screens and cameras in 2003. The high-end Nokia 6108 pen-based phone for the Chinese market enabled text input, hand writing recognition and predictive text in English and Chinese. In 2002 it launched Nokia 6650, which can be operated through GSM (2G) and WCDMA (3G) protocol. It had a large colour display and integrated camera with picture and video capture capability as also multiple data connectivity options. It launched Nokia 7600 powered by 3G technology has an integrated camera, video recorder and music player in 2003.

Nokia expanded 3G networks in UK, France, Switzerland, Singapore, Hongkong, Greece and Bahrain. It launched EDGE (Enhanced Data rates for Global Evolution) networks and TETRA networks to enhance the bandwidth of GSM/GPRS transmission technologies.

FINANCIAL PERFORMANCE OF NOKIA

After having impressive and extraordinary performance in 1990s, its net sales had fallen from Euro 31 billion in 2001 to Euro 30 billion in 2002 and Euro 29 billion in 2003 (Table 1). However its operating profits as also net profits had shown an increasing trend during the same period (Table 1).

The distribution of net sales by business groups indicated that Nokia mobile phones constituted 80% of their total sales whereas Networks constituted only 19% in 2003 (Table 2). The share of net sales of Nokia Networks had fallen from 29% in 2000 to 19% in 2003. However, the share of net sales of Nokia Mobile Phones had increased from 74% to 80% during the same period. The share of Nokia Venture Organisation was insignificant. The net sales of Nokia Networks had been falling since 2001. Net sales

of mobile phone had shown only marginal increase during 2001-03 (Table 3). The operating profits of mobile phones had improved in 2003 only marginally. The net profits of networks and venture organisations had shown negative operating profits (Table 3). There was a sharp fall in personnel from 58708 in 2000 to 51359 in 2003 (Table 3).

The main market segments of Nokia were Europe/Africa/Middle East (57%) followed by Asia Pacific (22%) and America (21%) in 2003 (Chart II). Nokia's ten market centres which represent 64% of total sales are given in Table 5. Nokia's main market centre was USA (15.2%) followed by UK (9.1%), Germany (7.8%) in 2003 (Table 5, Chart III). It is interesting to note that Nokia's market in Finland was less than 2% in 2003 (Table 4). Nokia has production centres in 10 countries, R&D in 15 countries and sales to 130 countries. Nokia invested heavily in R&D activity with an annual expenditure of euro 3.8 billion in 2003 which constituted 13% of net sales. Nokia had 19,849 R & D employees approximately 39% of Nokia's total personnel.

Nokia's return on capital employed had increased from 27.9% in 2001 to 34.7% in 2003. Return on equity had increased from 19.1% to 24.4% during the same period. Equity ratio has increased from 56% to 64.8% during and the net debt equity ratio had fallen from -41% to -71% during the same period.

CUSTOMER FOCUS

Nokia's mobile phones are designed to focus on customers. They aimed at understanding the end-user market and make the mobile handset a mass consumer good. They created a global consumer brand by unifying design, technology and marketing image. They realised that mobile phone is a personal technology and it must suit its user in terms of functions and aesthetics. Their philosophy is "to understand the market needs". Their phones have consumer-friendly features such as changeable ringing tones and signal, battery indicators etc.

NOKIA'S STRATEGY OF COMPETITION, COLLABORATION AND GLOBALISATION

Mobile phones are quickly becoming a commodity. Nokia constantly improved its phone but at the same time sell them at low price. The demand for cellular phone was growing at the rate of 30-50% annually, especially in some

TABLE 1: NOKIA'S FINANCIAL PERFORMANCE

PARTICULARS	(IN MILLION EUROS)				
	1999	2000	2001	2002	2003
Net Sales	19,772	30,376	31,191	30,016	29,455
Operating Profits	3,908	5,776	3,362	4,780	5,011
Profits before taxes	3,845	5,862	3,475	4,917	5,345
Net Profits	2,577	3,938	2,200	3,381	3,592
Research & Development	1,755	2,584	2,985	3,052	3,760
Capital expenditure	1,358	1,580	1,041	432	432
Earnings per share	0.56	0.84	0.47	0.71	0.75

Source: Nokia Financial Statements 2000, 2003

TABLE 2: NET SALES BY BUSINESS GROUPS (MILLION EURO)

PARTICULARS	1999	2000	2001	2002	2003
	AMOUNT	AMOUNT			
Nokia Networks	7,714 (25.4)	5,673 (28.7)	7,534 (24.2)	6,539 (21.8)	5,620 (19.1)
Mobile phones	21,887 (72.1)	13,182 (66.7)	23,058 (73.9)	23,211 (77.3)	23,618 (80.2)
Nokia Venture Organisation	854 (2.8)	415 (2.1)	585 (1.9)	459 (1.5)	366 (1.2)
Nokia Groups*	30,376 (100.0)	19,772 (100.0)	31,191 (100.0)	30,016 (100.0)	29,455 (100.0)

Source: Nokia Financial Statements 2000, 2003

Note: Figures in parenthesis indicate percentages

TABLE 4: TEN MAJOR MARKETS, (NET SALES)

COUNTRIES	1999	2000	2001	2002	2003
USA	3360 (17.0)	5312 (17.5)	5614 (18.0)	4665 (15.5)	4475 (15.2)
China	2332 (11.8)	3065 (10.1)	3418 (11.0)	2802 (9.3)	2013 (6.8)
UK	1855 (9.4)	2828 (9.3)	2808 (9.0)	3111 (10.4)	2693 (9.1)
Germany	1679 (8.5)	2579 (8.5)	2003 (6.4)	1849 (6.2)	2297 (7.8)
Italy	968 (4.9)	1243 (4.1)	1168 (3.7)	1342 (4.5)	1003 (3.4)
France	951 (4.8)	1085 (3.6)	1260 (4.0)	1273 (4.2)	867 (2.9)
Brazil	600 (3.0)	1056 (3.5)	892 (2.9)	773 (2.5)	805 (2.7)
Spain	420 (2.1)	678 (2.2)	644 (2.1)	531 (1.8)	748 (2.5)
Total	19772 (100.0)	30376 (100.0)	31191 (100.0)	30016 (100.0)	29455 (100.0)

Source: Nokia Financial Statements 2001, 2002 and 2003

Note: Fig., in parenthesis indicate percentages

TABLE 3: NET SALES, OPERATING PROFITS AND PERSONNEL BY BUSINESS GROUPS

(IN MILLION EURO)								
Particulars	1996	1997	1998	1999	2000	2001	2002	2003
1. Net sales								
Nokia Network	2,242	3,166 (41.2)	4,390 (38.7)	5,673 (29.2)	7,714 (36.0)	7,534 (-2.3)	6,539 (-13.2)	5,620 (-14.1)
Nokia Mobile phones	3,629	4,649 (28.1)	8,070 (73.6)	13,182 (63.3)	21,887 (66.0)	23,058 (5.3)	23,211 (0.0)	23,618 (1.8)
Nokia venture Org.	-	-	-	415	854 (105.8)	585 (-31.5)	459 (-21.5)	366 (-20.3)
Nokia Group	6,613	8,849 (33.8)	13,326 (50.6)	19,772 (48.4)	30,376 (53.6)	31,191 (2.6)	30,016 (-3.8)	29,455 (-1.9)
2. Operating Profits								
Nokia Networks	501	682 (36.1)	960 (40.8)	1,082 (12.7)	1,358 (25.5)	-73	-49	-219
Nokia Mobile Phones	241	645 (167.6)	1,540 (138.8)	3,099 (101.2)	4,879 (57.4)	4,521 (-7.3)	5,201 (15.0)	5,483 (5.4)
Nokia venture Org.	-	-	-	175	-387	-855	-141	-161
Nokia Group	717	1,422 (98.3)	2,489 (75)	3,908 (57)	5,776 (47.8)	3,362 (-41.8)	4,780 (42.2)	5,011 (4.8)
3. Personnel								
Nokia Networks	12,558	15,710 (25.1)	19,280 (22.7)	22,804 (18.3)	23,508 (3.1)	22,040 (-6.2)	18,463 (-16.2)	16,115 (-12.7)
Nokia Mobile Phones	10,927	12,631 (15.6)	16,064 (27.2)	20,975 (30.6)	27,353 (30.4)	27,320	26,090 (-4.5)	27,196 (4.2)
Nokia venture Org.	8281	7,149 (-13.7)	5,747 (-19.7)	1,256 (6.9)	2,222 (-8.5)	2,155 (-3.0)	1,566 (-27.3)	1,536 (-1.9)
Nokia Group	31,766	35,490 (11.7)	41,091 (15.8)	51,177 (24.5)	58,708 (14.7)	57,716 (-1.7)	52,714 (-8.7)	51,605 (-2.1)

Source: Nokia Financial Statements 2000, 2002
Note: Fig., in parenthesis indicate % change over the previous year

TABLE 5: KEY RATIOS AND ECONOMIC INDICATORS (IN MILLION EURO)

Particulars	1999	2000	2001	2002	2003
Return of capital employed (%)	55.7	58.0	27.9	35.3	34.7
Return of equity (%)	41.3	43.3	19.1	25.5	24.4
Equity ratio (%)	53.3	55.7	56.0	62.5	64.8
Net debt ratio (%)	-41	-26	-41	-61	-71
Net profit (% of net sales)	13.0	13.0	7.1	11.3	12.2
Capital expenditure (% of net sales)	6.9	5.2	3.3	1.4	1.5
R&D expenditure (% of net sales)	8.9	8.5	9.6	10.2	12.8

Source: Nokia Financial Statements 2000, 2003

Chart I : Net Sales by Business Groups (%) - 2003

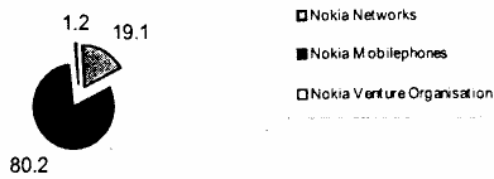


Chart II : Net Sales by Market Segment - 2003

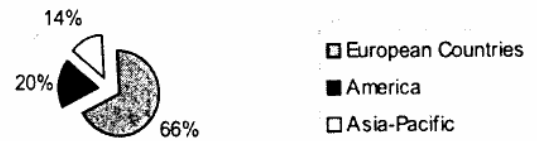


Chart III Net Sales by Ten Major Makrt - 2003

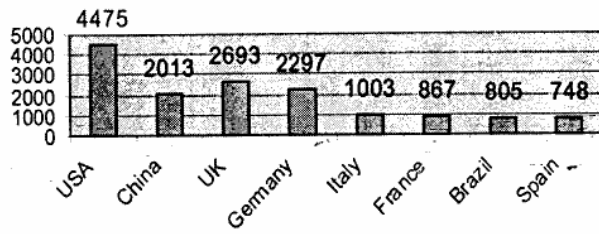


Chart IV :Handset Market Share in 2002

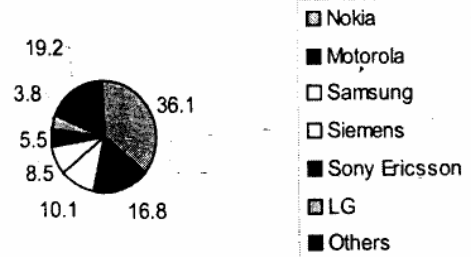
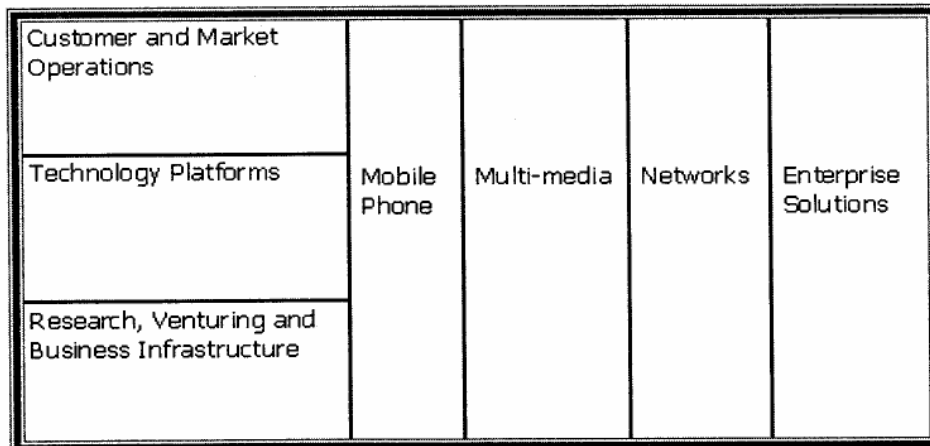


Chart 5: New Nokia Business Group Structure



Asian market. There were 1.3 billion mobile subscribers worldwide in 2003 and it would be 2 billion in 2008. Nokia's strategy was to become a global player in telecommunications. Nokia's ongoing efforts were to anticipate future industry trends and adapted its global strategy to match them. It had strengthened its network implementation capabilities by selecting internationally recognised partners. It has appointed Unipalm as the UK distributor for its WAP Server technology and IP Security Solutions network security appliances. It had signed a contract with Ukrainian Mobile Communications (UMC) to supply the Nokia WAP (Wireless Applications Protocol) solutions enabling the delivery of mobile internet services to UMC customers. Nokia Network Russia sold equipment to cell phone service providers in Russia.

Nokia routinely brought together 250 and odd managers from over 40 countries where the company operated to form its strategy. Their managers met in small groups as part of an ongoing series of brainstorming sessions to identify life style and technological trends that might represent opportunities for Nokia in various markets. Nokia's strategy was to keep customers happier by incorporating technological advances. Nokia was for a sustainable Mobile Information Society. Nokia applied global operating standards for business practices, transfer of technology and management system through out its business units. Environmental matters were integrated into Nokia's unified management system. It used the International environmental management standards ISO 14000 series as guidelines for environmental management. Environmental issues were incorporated in product development and manufacturing supply chain, real estate management, legal compliance and risk management.

Nokia bought an increasing amount of components and assemblies from suppliers around the world for its production. Nokia emphasised on good planning and execution to work closely and strategically with operators, distributors and other partners. They had developed vendor financing as one of its core competencies to be aggressive in increasing market share. The glaring strategy to improve its competitiveness was to disperse its manufacturing facilities to low cost locations in Korea and Mexico. Ensuring supplier compliance with Nokia's environmental standards was an integral part of Nokia's supply chain management. The ultimate goal of Nokia's risk management were to ensure customer satisfaction, to protect shareholder value, to protect company brand and

image and instilled risk management principles into the daily operating procedure of all Nokia personnel so that all employees implemented proactively risk management practices in their daily works. Nokia's approach to becoming more international was characteristic of its entrepreneurial style.

Nokia along with other electronics giants Motorola, Samsung, Siemens, Sony Ericsson, Matsushita and palmtop software maker Psion founded Symbian to step up the evolution of wireless information devices. With Symbian effort, Nokia could develop a feature mobile phone, smart phones and communicators.

MARKET POSITION

Nokia was always well ahead of its competitors viz. Motorola of US, Ericsson of Sweden, Siemens of Germany and Alcatel of France in mobile handsets. The competition between Nokia and Ericsson helped to turn both companies into global giants. While Nokia was the market leader in handset making, Ericsson was the king for wireless network equipment. The market share for Nokia handset was 36.1% followed by Motorola (16.8%), Samsung (10.1%), Siemens (8.5%) and Sony Ericsson (5.5%) in 2002 (Chart IV). While Nokia garnered 66% of the revenue and 19% profit margins from handset making segments, Ericsson was dominant player in the fast growing network equipment that provided them 65% of its revenue. Nokia maintained their leadership in handsets because they had always excelled at designing and marketing mobile phones at a variety of price levels. However, Ericsson dominated in network with a 33% market share. Ericsson's revenues from networking equipments had been growing at 29% a year with 17% profit margins. Nokia predicted that there would be more phones than people. The data centric third generation phones were on the way to West Europe and Germany.

STRATEGIC ISSUES

Nokia's corporate culture was one of the company's strategic and competitive advantages. Nokia believed in establishing standards and to keep them open to everyone which would facilitate the growth of the market for mobile internet services. Nokia's main concern in spite of his strong position in the mobile phone market was to tackle the strategic issues emanating from the Asian manufacturing firms such as Samsung and Matsushita. Their shift from the existing GSM to 3G would give them a

boost, which could challenge Nokia's leadership. Again the convergence of the mobile telephony and computer industries would open the way to new business models and would bring powerful competition.

Nokia started to work on cooperative ventures like WAP Forum. Ericsson, Motorola, Microsoft etc. were the initial members of the forum. The members agreed that WAP would be made compatible with technology specified by an Internet Standard-setting body. They also started to work with other companies to develop operating system for mobile phones. WAP's major competing standard was i-mode developed by the Japanese cellular operator NTT DoCoMo. Nokia had allied with Internet companies, e-commerce companies, telecom operators and several European banks to use Nokia's WAP services.

MERGERS, ACQUISITION AND ALLIANCES – A STRATEGY FOR COMPETITIVE ADVANTAGE

As said earlier, Nokia as a company started with the merger of three traditional companies viz. pulp and paper, tyres and cables, and paper manufacturing. Nokia continued the strategy of mergers and acquisitions to gain superiority in technology and competitive advantage and globalisation.

In August 2000, Nokia acquired Discovery Com, a company that provided solutions that enabled communications service providers to rapidly install and maintain Broad Band Digital Subscriber Line (DSL) Services for fast Internet access. This acquisition would strengthen Nokia's loop management and related DSL competencies. It acquired Network Alchemy for IP clustering solutions in March 2000. Nokia acquired Telekal Corporation, Rooftop Communications Corporations and Diamond Lane Communications to strengthen its capabilities in IP Wireless bypass technology in 1999. It acquired Ramp Networks inc. to conduct secure transactions over the Internet.

Nokia and JIANGERSU TA' a sub-division of China Telecom had signed a contract for a DSL (Digital Subscriber Level) access networking 2001. With innovative technology, Nokia has strengthened its market position as a leading supplier of mobile and broad band network system and mobile phones in China. Nokia and Hewlett Packard came together to develop internet based platform solutions for proliferation of mobile e-services.

Nokia acquires Redback to have a smart router system. Taiwan-Chunghwon Telecom Labs (CHTTL), the technology development group of Taiwan's state owned telecommunications operations, has selected Nokia to conduct its 3G trials. Nokia would provide CHTTL with the core and radio network, network management and technical consultancy services. CHTTL would build its wide band CDMA (W-CDMA) testbed with Nokia.

Cisco Systems Inc., the worlds biggest maker of Computer Networking equipment formed an alliance with Nokia for networking and IP world. With this cooperation, Nokia would market and sell fully interoperable system solutions consisting of Nokia's IP mobility core and Cisco's backbone routing technology.

Nokia signed an agreement with Inter Trust Technologies to handle secured content in Nokia product. Nokia had partnership with Geowork, a software firm to tap new technologies. Nokia and Visa International have teamed up to form the first Pan-Asian alliance to enable new mobile commerce transactions. It has signed a strategic alliance with India based telecom software applications provider Mahendra-British telecom for jointly marketing its mobile internet applications.

Nokia signed a letter of intent to deliver a 3G Wide band Code Division Multiple Access Radio Access Network and IP mobility core network for Telia Mobile in Finland. Nokia was the major supplier of its 3G networks for Itineris in France, the Orange Network in UK and Germany.

America Online Inc and Nokia have reached a licensing agreement to develop and market a Netscape branded version of Nokia's WAP microbrowser for use across various mobile devices.

Nokia has signed a letter of intent with Indianapolis based Brightpoints to distribute all of the Finish Vendor's original accessories and logistic services for the US and Latin America. Brightpoint's extensive experience in the wireless industry made them a competitive choice for their project. Nokia had made an agreement with Unisys to bolster its connecting @ care program for existing GSM, GPRS and 3G network operators. Nokia forged an alliance with Cable and Wireless HKT, Hong Kong to deploy security products. Under the contract, the two companies would provide corporate customers in Asia to secure data links between multiple networks or network devices. Nokia has

signed an agreement with Austrian GSM Operator One for the supply of the Core Nokia GPRS networks. With this agreement, one will take the next step to providing mobile Internet accesses to their customers.

Nokia has signed a letter of intent with the leading major domestic appliance manufacturer Whirlpool to cooperate in the creation of innovative-networked solutions. They had licensing agreements with game developers and publishers including Activision Inc, h2g2, Oxford Softworks and Net Entertainment AB.

Nokia Networks and Cap Gemini, one of the world's largest consulting and systems integration companies have signed a Memorandum of Understanding to have strategic cooperation in the development and delivery of end-to-end Mobile Internet Solutions for customers.

Nokia's strategy towards collaborations can be seen in many of their innovative activities. For instance Nokia has teamed up with Ericsson and Motorola to develop a common industry framework for secure mobile electronic transactions. Nokia is paving the ways to the mobile information society with its innovative products and solutions. It collaborated with Cadence Design Systems, Inc., the world's leading supplier of electronic design products and services to get design services for base station products. With the collaboration of MI Singapore and Cable and Wireless HKT Mobile Services, Hong Kong, Nokia carried out a GPRS roaming signaling trial between the two GPRS Core networks. It has teamed up with Internet Thailand to launch the first mobile commerce market. It has collaborated with Chinadotcom Corporation to supply the broadband technology its network. Nokia has signed with China's Yunnan Mobile Communications Co. (YMCC) to deliver GSM 900 MHz and GSM MHz network expansion to YMCC. Under this deal, the Finnish company would supply high capacity mobile switching equipment, base station equipment, the UltraSite base station solution and a range of professional services covering radio network planning, radio network optimization, project management, telecom implementation, assessment and certification services for competent transfer, training, helpdesk and on-site support services. It has signed with Jilin Mobile Communications Co. (JMCC) also to supply a complete GSM 1800 network in China. In total Nokia has established eight joint ventures, one wholly owned manufacturing plant and an R & D centre in China.

NEW CHALLENGES

The net sales of the company has fallen from euro 31,191 million in 2001 to euro 29,455 million in 2003, an average fall of 2.8% per annum. Jorma Ollila wanted another restructure of the company to improve its sales and operating profits. It had lagged behind in implementing 3G technologies as predicted especially in Asia-Pacific and Europe.

On January 1, 2004 Jorma Ollila had undertaken organisational restructuring to face the challenges. The new organisation consists of four business groups: Mobile phones, Multimedia, Networks and Enterprise solutions. In addition to the business groups, the new organisation also included three-company-wide groups: Customer and Market Operations, Technology Platforms and Research, Venturing and Business Infrastructuring (See the Chart V).

Mobile phones had concentrated on customer orientation to capture global market by exploiting economies of scale. Multimedia focussed on such functions as imaging, games, music, media and a range of other attractive contents. Nokia Networks indulged in network infrastructure service, delivery platforms and related services to mobile operators. Enterprise solutions offered a wide range of mobile devices and secured mobile connectivity solutions to enterprise.

NOKIA'S FUTURE

Nokia Corporation has its sight set on capturing 50% of the worldwide mobile phone market in future. Future growth areas include new market leadership in security infrastructure for corporate, supplying solutions to help corporations block viruses and intruders at their network gateways. It aimed at to be a global leader in the mobile Internet.

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