



A Guide to a Strategic Plan

Nokia



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Executive Summary

The phone industry is quickly becoming the centerpiece of personal communication, allowing us access to an ever-widening range of services. The global mobile phone market has been characterized by enormous growth and technological change. This has been made possible by the deregulation of telecommunications and the fundamental advances in wireless technology. As a result of increased mobile phone penetration worldwide and the development of new product and services for the growing markets. Nokia expects growth and rapid technological changes in the industry to continue.

One of the most important developments in the mobile phone industry is the evolution of the mobile phone from a mobile voice-centric telephone to a personal data-centric communication accessory that can access wireless content and services, including the Internet. A shift from the second generation to a 3G system is increasing the opportunities for Nokia to expand design capabilities. With the expansion of GSM networks, customer focus will shift to design and service.

According to the Porter analysis, the threat of new entrants is classified as high due to the level of innovation and deregulation of the industry. The Supplier's power is ranked in the medium range because Nokia has their own manufacturing. The power of buyers is low because the customer's choice of substitute products is high and education about the product is also regularly available. Substitutes are considered a medium threat because of Nokia's ability to incorporate the customer's sense of identity into their design. The intensity among competitors is high because of the level of product differentiation in shape and design and brand differences.

Nokia has at least two continuous strengths that will be very hard to imitate: 1) its design and branding capabilities coming from an understanding of the global markets it serves, and 2) sleek manufacturing efficiencies. Nokia has the ability to re-tool manufacturing for a new design in only eight days. These core competencies directly relate to a return of capital climbing to 29% in 1995 and to 56% in 1999. Its earnings multiple expanded by more than a factor of six over the same period.

The growing market opportunities in Asia and North America are too large to ignore. Nokia must establish select partnerships to access these markets so they can introduce their design and manufacturing capabilities to a larger population. The development of GSM will expand Nokia in design and quality into the 3G of cell phones. Nokia needs to aggressively pursue the GSM and 3G mobile networks development. Nokia can compete within its strength of design and allow service providers to compete for service plans not just service quality. Furthermore, to do this, Nokia must secure, through select partnerships, a position in the Asian and North American markets. Through strategic partnerships, Nokia can introduce their design and provide customers with a diverse range of products offered through efficient manufacturing capabilities.

Nokia must also plan for new features in the cell phone and strongly consider manufacturing a smartphone model. A partnership with Microsoft would give Nokia access to Microsoft's popular smartphone CE Smartphone operating system. This would allow them to expand their product offerings and also to capture the immerging consolidation market. The global position of Nokia will be engraved in the industry and in the consumers' mind. The market is exceedingly attractive for Nokia through select partnerships and product development; Nokia can provide products and services that continue to capture their innovative inventions.

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History

Nokia companies are made up of three business groups: Nokia Networks, 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 1999, Nokia boasted sales to over 10 countries, research and development in 14 countries, production in 10 countries as well as global networks of distribution, sales, customer service, and other operational units. Headquartered in Finland, Nokia is listed on the New York, Helsinki, Stockholm, London, Frankfurt and Paris stock exchanges. Nokia employs more than 55,000 people.¹ Understanding its customers is directly related to Nokia's innovative design. Therefore, our team has developed a comprehensive market strategy encompassing their design and manufacturing competencies. Nokia's unique ability to forecast the design and growing segments in technological growth widens Nokia's competitive advantage.

External Analysis

The Communication Networks Industry

Telecommunications networks are undergoing fundamental changes. Internet and other IP-based applications and services have proven popular with both consumers and businesses. We anticipate strong demand for a wide range of mobile services using third generation or 3G mobile networks as these services become commercially available. Most of the service providers' networks are second generation or 2G networks. 2G combines numerous standards used across the globe. 2G is made out of such systems such as GSM, CDMA, and PCS. Cellular phones with these standards use more voice oriented technology. GSM is the 2G telecommunications standard used world wide except in the U.S., Japan and South Korea. Most countries in Europe and Asia using the GSM standard. Different service providers supply the same type SIM chip once the SIM card is inserted into a phone that phone can be used instantly. Customers can put their service chips into any brand phone which uses a GSM standard. GSM service providers do not have any power in these areas because customers can change service and keep their phone.

In Europe and Asia, the GSM system is the mainstream of telecommunication. Due to a standardized system, people can easily transfer their service providers without changing their mobile phone. This leads to a relatively high competition among manufacturers of mobile phones in terms of fashion design, functions, user-friendly interface, and technology. Their voice clarity among service providers is superior. Customers change their mobile phone once or twice a year. Due to improvements in cellular phone technology and design. People purchase cell phones not only because of design but also because of the service and the coverage areas. The phone becomes a piece of apparel or accessory that they change just like they change their clothes. Some people even wear their phones on straps on their necks like a necklace.

In North America, there is no standardized system within service providers with CDMA, GSM, PCS systems adopted by AT&T, Sprint, and Nextel. Consumers are more concerned about the voice clarity, connectivity range and service rate, none of which can be affected by the phone. Based on research most people use their mobile phone more than one year and have little or no brand preference. Individual phone features, ergonomics and other design factors come second to service.

With the coming of 3G technologies, mobile phones will become much more than just a phone. They will also integrate more advanced technology such as PDA, Pager, and remote control. This increases

¹ www.nokia.com

competition among vendors is intense as operators make new investments parallel with 3G licensing. 3G licenses allow operators to use new portions of radio frequencies to provide a new generation of mobile services. Nokia intends to become the leading supplier of WCDMA networks and 3G mobile handsets on a global basis.

The transition from existing second generation to 3G networks is driven primarily by two factors. First, enhanced mobile application requires the advanced technology of 3G networks to operate. Second, strong mobile and Internet subscriber growth has continued throughout the world and has required operators to upgrade their networks to support additional capacity and packet data capacity. Continuing consolidations in the network operator industry has created operators and service providers with global reach. In addition, increased competition from new markets entrants has required existing operators to introduce a wider range of more innovative services. Hence, a direct relation in the design and development of new products, in line with these new technologies, is required to increase profits.

The global mobile phone market is characterized by enormous growth and technological change enabled fundamental advances in wireless technology. The size of mobile phone growth is measured by the number of cellular subscriptions worldwide as well as by the total annual sales volume. Our team expects growth and rapid technological changes in the industry to continue, as a result of increased mobile phone penetration worldwide and the development of new products and services for the growing replacement market.

The Mobile Phone Industry

The mobile phone industry is currently estimated to be the world's largest consumer electronics industry as measured by unit's sales. Nokia further estimates that global mobile phone sales' volume during 2001 totaled approximately 405 million units, rising from approximately 280 million units in 1999. Nokia currently expects industry volume in 2002 to show very modest growth. Mobile phone replacement volumes were spurred by the acceleration of technological developments and the broadening of consumer demand. In 2001, approximately, 60% of the total handset market volume derived from first mobile phone users. However, our team expect the majority of market volume to shift in 2001 in favor of replacement purchases. Nokia estimates that the share of replacement sales will rise to represent between 70% and 80% of total sales within the next few years.²

In 2001, digital products accounted for over 95% of total mobile phone sales volume. GSM is the dominant cellular standard in the world, constituting over 50% of global sales volume in 2001. TDMA and CDMA digital protocols are next, representing approximately 13% and 15%, respectively of the global sales volume in 2001. Nokia's market forecasts indicate that GSM, including GPRS, will continue to constitute over 50% of the total market volume through 2003.³ We expect that the primarily 3G, WCDMA will start to accumulate a meaningful share of total market volume beginning in 2003. Moreover, the increase in mobile phone use ascertains the strategic direction that Nokia should take. Most importantly, due to the nature of the technological innovative industry, Nokia, must forecast and design according to projection in order to capture a first mover advantage in the market as it did in Europe.

Nokia's future strategic decisions are greatly influenced by the growing increase in the telecommunications evolution. Due to the increase in technology, the global mobile phone subscriber base at the end of 2001 totaled approximately 715 million. Nokia expects this figure to rise to over one billion within the first half of 2002. This projection is based on current subscriber growth rate estimates worldwide. Within this time frame, Europe is likely to remain the largest region in terms of penetration, followed by the Americas and

² www.nokia.com

³ www.nokia.com

the Asia-Pacific regions. Global penetration has reached approximately 12%; about 70% in Finland, 40% in the United States and 7% in China.⁴ The various global markets show a growing market potential that Nokia has to penetrate in order to remain industry leader.

Demographic Analysis

In the region of Asia/Europe the GSM system is mainstream for telecommunication. Due to a standardized system, people can easily transfer their service provider without changing their mobile phone. In Japan the mainstream standard is the PHS system for which several large Japanese companies have produced mobile phones. The North America's there is no standardized system within service providers with CDMA, GSM, PCS systems adopted by AT&T, Sprint, and Nextel. Consumers are more concerned about voice clarity, connectivity range and service rate.

Technology

The GSM, CDMA, PCS mobile phone networks is a more voice-oriented technology. But with 3G technologies the mobile phone is not just a phone but also integrates more advance technologies such as a PDA, Pager, and Remote Control. It also supports the most important evolution technology; high speed Internet.

Social Culture

Customers aspire to more state-of-the-art technology and more fashionable and customized design. These trends are incorporated into the behavior of purchasing mobile phones. People also need a more efficient center.

Porter Analysis Five Forces

Threat of New Entrants

The telecommunications industry is comprised of an enormous number of technological firms. The evolving nature of innovation and design increases the threat of new competitors. Therefore, the use of technology, fixed costs, brand awareness, R&D costs, the economic scale and scope with government policy comprise a high level of threat to Nokia. First, the emerging trend in the market is 3G, with high fixed costs, making the market very competitive and difficult to enter. Second, brand awareness in this industry is also high because customers believe that the better brand can provide stability, quality, and added services. Third, R&D costs are again very high both in the 3G and GSM market. It is important to stay abreast of trends and create new fashions because customers always want the newest technologies and design. Fourth, economies of scale and scope are high due to large company's ability to mass produce products to receive larger profit margins along with the ability to limit pricing to deter smaller competitors from entering the market. Finally, government policy strongly influences the introduction of new technologies that require certain advances in infrastructure to provide innovative functions. An additional threat can be traced to Nokia's relationship with select partners. The nature of the relationship can effect

⁴ www.economist.com

Nokia's product distribution, if the service provider offers poor service. On the whole, Nokia's threat of new competitors is very high.

Power of Suppliers

The power of suppliers relates to the suppliers' level of intensity, the chip makers leverage, the transfer cost of appliances, the transfer cost of switching chips or software, and the degree of partnerships. First, the supplier's level of intensity is low because Nokia uses its own factories to make its product. When Nokia order outside parts, it can receive good deals because it buys in bulk. Second, the technology of the chip makers is medium because it is held by a select group of firms including Texas Instruments (TI), Intel, and Motorola. Third, the transfer cost of appliances such as the keypad is low due to the availability of manufactures of these specific items. Fourth, the transfer cost of switching ships is high. The transfer cost is directly related to the costs associated with switching design and manufacturing functions. Fifth, the power of network suppliers in the GSM area is medium. Customers can change to other suppliers easily using their original cell phones. Network suppliers can't control or handle all of the communication networks industry. Sixth, the power of information technology suppliers in medium. A large company wants to reduce costs by signing with an IT supplier so that IT suppliers will become more important during this trend. Finally, the AT&T partnership is high because of the risk pf loosing the partnerships; therefore, loosing the market share. All in all, the power of suppliers is rated in the medium range.

Power of Buyers

The areas to be discussed include the buyers' level of intensity, transfer costs, the buyers' information, and forward integration power, loyalty, choice and finally the purchase quantity. First, we have the buyers' level of intensity which is relatively low. Nokia is a global company with customers located in various countries around the world. Second, the transfer cost is also qualified as a low threat. Customers can easily use other brands. Therefore, customers do not need to be concerned with transfer costs. Third, the buyers' information is also high due to the advent of the Internet where customers' have access to an unlimited amount of buying information. Customers can compare brands while educating themselves on the newest technological offerings. Fourth, the buyers' forward integration power is marked as low because of the buyers' ability to select forward and backward compatible products. Fifth, the buyers' loyalty is rated in the medium range. This is directly related to the improvement in technology. Customers' want the newest in fashion with the price being the limited factor. If another manufacturer produces the product that customers' desire, then price and service may be the only thing customers' are loyal too. Sixth, the level of buyers' choice is very high. With constant innovation, the consumer is continuously offered new products with the newest technologies. Finally, the separation between the end user and the company user or dealers is necessary. The end user purchase quantity is low because that are generally limited to using one phone. However, a growing trend has centered on changing phones yearly, to keep up with the latest designs and technology. The company or dealer purchase quantity is high due to their desire to distribute and sell the product and a markup cost. In the American market, wireless network AT&T and Sprint are handling the industry because of the special system. Their roles are both supplier and buyers. In most GSM systems areas, the network companies only can become buyers. By the large the power of the buyer is rated as a high average.

Product Substitutes

The major substitutes for the mobile telephone industry can be influenced by technological products that include pagers, walkie-talkies, cellular/Internet PDA devices, toll phones, 3G products, and smartphones. A majority of these substitutes are outdated technologies that no longer classified as strong substitutes for the mobile phone. On that note, the introduction of consolidated products has strongly positioned themselves in

the market. For example, the smartphones serves the function of a cell phone, wireless Internet device, pager, and PDA. This growing trend is not a large threat because of the innovation behind the partnerships as well as innovation of the products.

Intensity among Rivalry

The intensity among rivalry are functions based on looking at the growth of the industry, capital intensity to produce the product, product differentiation, brand differentiation, transfer cost, information complexity, and competitiveness. First, the growth industry is high. The growing trend is a shift towards making products in line with 3G capabilities, growing at a rate of 20% annually. GSM market sale is still growing in the developing countries in Asia and is a very large business opportunity. GSM cell phones are the main market for cell phones producing companies. These companies earn most profits from these GSM areas. Second, the capital intensity is very high for the industry, for R&D, for development, and for manufacturing. Third, the level of product differentiation in shape and design is very high with many companies producing their own version. Function of the product is ranked at the medium range because of the ability of companies to reverse engineer products. Fourth, brand rivalry is very high due to the importance of brand awareness show four main characteristics. 1) Easy to use 2) product design 3) quality and stability, and 4) customer service. Fifth, the information complexity is marked as being in the low range because consumers can educate themselves easily. Final, the level of competitiveness is high. Very few firms control the global market. Many firms such as Motorola, and Ericsson, are trying to reach the number one position in the industry. In various countries, many small companied want to grab hold of a piece of this market comprised of products offering exclusive design to attract new customers. Generally the competitiveness of the market can be summarized as high for the intensity among rivalry section. The subsequent will provide and in-dept analysis of the two main competitors for Nokia.

Competitive Analysis

Across the globe, telephone service providers are expanding networks for wireless and wireline communications. And, the industry has also undergone deregulation which spawned a wave of smaller regional network operators. Developing nations have stepped up efforts to expand basic telephone service. The global telecom equipment market broke \$325 billion in 1999 and will continue to grow by about 15% annually. The U.S. telecommunications equipment industry grew to \$91.5 billion in 1999. As the wireless segment has heated up, so has competition to be the top provider of mobile staying ahead of Ericsson, which has focused on becoming the industry leader in wireless infrastructure equipment sales.⁵

Ericsson

Ericsson has always been a runner-up to Nokia in terms of its telecommunications technologies. However, it was lacking in design, ergonomics and user-friendliness. Ericsson successfully established itself among the top three companies in the industry. Ericsson has successfully established itself among the top three companies in the industry. They had great success in Europe and Asia, but its North American product line proved unexciting for the consumer. In April 2001, Ericsson made a very interesting decision opened the door to directly compete with Nokia, not only in terms of communication technology, but also with their innovative design and BlueTooth technology integration. Ericsson has formed a strategic alliance with Sony Electronics Corporations and agreed to share technologies in the field. Sony a consumer electronic giant, already has not only a number of fashionable cellular phones and accessories, but also a great customer base, and recognition and brand loyalty. Since the formulation of this joint-venture, both companies came out with a new line of technologically advanced and very user-friendly phones. Today,

⁵ www.hoover.com

Ericsson phones are recognized more not only in the European and Asian customers but also greatly welcomed by the recently discovered North American market.

Motorola

Motorola, the former dominant company in the telecommunications industry, is currently struggling from falling sales and reduced market share. To find the reason one does not need to look back very far. In 1998, Nokia introduced the new digital standard which not only dramatically improved the quality of voice communications, allowed for smaller phones, and improved battery life, but also became the foundation for the new standards which eventually led to the development and introduction of 2G, GSM, 2.5G and 3G (not all standards are available in all areas). Motorola failed to reengineer their products and adopt the new digital standard. They decided to stick to their analogue "flip" phones which shortly became unpopular due to their user-unfriendliness, bulkiness and generally problematic nature. Since then, Nokia's market share grew dramatically and shortly overtook Motorola's domination.

Few years after the switch to digital, Motorola unsuccessfully tried to regain their position in the telecommunication industry but was not able to do so. Consumer behavior had changed. They now demanded slick, stylish and user friendly phones, which Motorola could not deliver.

Competitive Advantage

Design/Brand

Clearly, one of Nokia's main competitive advantages is its design edge. Nokia's trademark, curved shape and other features, such as removable covers, designer models and personalized tones came from its early recognition that mobile phones were not just a niche product, but a mass-market phenomenon. Nokia's segmentation strategy, targeting different products to different customers depending on how they use their phones, is a reason for its leading market position. Business customers, for example, favored feature-rich, dual-mode phones, while other consumers wanted voice services with easy-to-use handsets.

This strategy led Nokia to introduce 31 phone models in 1998, 17 in 1999, and 18 in 2000. It drove production volume up 92% to 40.8 million units in 1998 the year it took the market-share lead for Motorola, which failed to manufacture digital phones quickly.⁶

Innovative Manufacturing

Of course, a segmentation strategy is not of much use if the company can not support differentiation and short product cycles with manufacturing efficiency. From 1996 to 1999, Nokia improved its operating profit margins from 10.8% to an industry-leading 19.8%. This strategy is very respectable for a company with gross margins of just 38.6%.

One of the biggest growth drivers is Nokia's cross-platform manufacturing facilities. Nokia's plants can be reconfigured to manufacturing any phone in just eight days, regardless of where the plant is or what it is currently producing. This provides a lot of flexibility to support product launches and manufacturing

⁶ www.nokia.com

Weaknesses

- 1) AT&T relationship in the U.S. market (A shift from Nokia's TDMA standard products).
- 2) Market share in Japan and United States reduces potential revenue streams.
- 3) U.S. market share in competition against Qualcomm's CDMA standard used by U.S. operators (except AT&T).
- 4) Nokia's primary business perception as a mobile phone manufacturer.
- 5) Profit dependency on mobile phone business risky because of the speed of innovation and development of new standards.

Opportunities

- 1) Develop the 3G cellular market in North America.
- 2) Develop partnerships and alliances to further penetrate the mobile Internet market in Asia and U.S. markets. For example, the AT&T partnership.
- 3) Introduction of a smartphone model.
- 4) Expand into the Asian and United States markets within the allotted legal guidelines.
- 5) Continue to expand development of GSM market.
- 6) Expand the market share in the U.S. market.
- 7) Advance E-Car technologies.
- 8) Leverage status as founder of BlueTooth.
- 9) Decrease the environmental impact of reduced paper weight.
- 10) Expand GSM networks capabilities.

Threats

- 1) Japanese 3G mobile phone manufacturers penetrate the European market and take the share from Nokia.
- 2) Consumer electronic firms like Sony and Panasonic of Japan aggressively move into the mobile Internet appliances and device market seeking dominant share positions.
- 3) Nokia defaults to a manufacturer with low-margin infrastructure hardware and commodity consumer products.

- 4) Nokia misses a cycle of new innovative mobile phones and fall behind competitors as the market shifts from 2G to 3G. (Possibly by investing monies in a standard that is not adopted by the customer's and another standard is accepted)
- 5) Nokia loses focus on its core business as it diversifies into home networking and mobile Internet devices, appliances, and servers.
- 6) Nokia's culture and management style become less effective as Nokia expands into the U.S. market, acquires start-ups and hires U.S. managers.
- 7) U.S. based technology firm's capture the most profitable parts for the mobile Internet.
- 8) Microsoft's Window CE operating system and Explorer Mobile micro browser dominate the mobile Internet, software market.

Constant changes in technology greatly increase the level of competition with new patented technologies reaching the market. Therefore, the industry is attractive for Nokia because of its ability to create partnerships with expansion of consumer driven products driving industry change. Therefore, Nokia has an opportunity to increase its market position through constant innovation and development.

Strategy

With different mobile standards around the world, Nokia should develop a strategy to cater to different network demands. As a group, we recommend that Nokia build strategies for The United States' and Asian markets. The development of Nokia's strategic plan may include one of the following objectives:

- 1) Nokia can sell wireless network equipment or become a joint partner in this area. Nokia currently follows its competitors in this area. Other companies want to merge with firms seeking to expand wireless product offerings.
- 2) Focus on core business, with expansion of the GSM networks along with an increased investment in 3G technologies.
- 3) Select partnerships to develop market potential in the U.S. and Asian markets.
- 4) Research potential alliances with Intel or Microsoft in order to meet growing customer demands.
- 5) Develop networks in South American and Africa under the GSM standard.
- 6) Focus on the manufacturing and design of innovative mobile devices.

These are some of the strategic decisions that Nokia can pursue. Our team strongly advocates that Nokia push for a network in Asia and in Europe that utilizes a GSM system, since consumers are more concerned with the outfit and the function of the mobile device. There is no doubt that Nokia should place more emphasis interacting with consumers and grasping consumer trends. Meanwhile with the emergence of 3G services, Nokia can develop more applications on mobile phones to meet customer demands. With the development and standardization of GSM, Nokia can have more influence on the growth of the industry and continue to hold the lead position.

In North America, because of several standards floating around the market, Nokia needs to create a partnership with several large companies to sell its products. With a different standard, customers are more concerned about which service plan a company can provide, along with its clarity and its price. Therefore, Nokia should push for the standardization of networks so that their core competencies in design and manufacturing can be maximized. The best way for Nokia to penetrate the North American market is to

partner with large U.S. service providers. With the standardization of GSM, Nokia can hold power in the mobile phone industry through leading innovation and design. Nokia's clear strengths are in the areas of product design and manufacturing efficiencies.

Nokia would also be well advised to seek a partnership with Microsoft or Palm in order to develop a Smartphone. The partnership is needed to adopt the Microsoft CE or Palm OS operating system. These systems are the two most commonly used systems in the market today and a joint-venture will allow Nokia to expand its already diverse product offerings. There is a strategic advantage for Nokia to adopt Microsoft Windows CE Operating System because of compatibility, flexibility and popularity. `

Conclusion

Nokia is the undisputed leader in the telecommunication industry, and the world's largest producer of numerous technology-related products and services. Within just under 150 years, the company has been transformed from a small family owned paper manufacturer into a manufacturer of rubber shoes, tires and raincoats. Subsequently it became a telephone and telegraph cable producer, and finally, what it is today. Nokia is arguably among the top two companies in numerous ratings done by many reputable industry analysts. Nokia's brand name is world renown; its products consumed by billions of people worldwide.

Finally, Nokia is an innovator and generally the first company in the industry to invent, implement and commercialize its never-ending technological breakthroughs. WAP, 3G, wireless applications and other new cutting-edge technologies never thought possible are being injected into current telecommunications. As was proven before, what was once boring will become "hip" if only Nokia blesses it with its magic touch? This is good, not only for the public, but also for other companies in the telecommunications industry. The envelope will be pushed harder and further, and in the end, the world as a whole will benefit from the discoveries in technology. Nokia's ability to incorporate design and manufacturing into its product gives Nokia additional opportunities that should be strategically implemented into the future focus of operations.



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www.nokia.com

Appendix

PowerPoint Presentation