

Analysis of Competition in the Mobile Phone Markets of the United States and Europe

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ANALYSIS OF COMPETITION IN THE MOBILE PHONE MARKETS OF THE UNITED STATES AND EUROPE

Competition in an economic context is a widely studied phenomenon with a significant body of accumulated research and theory. However, competition in the mobile phone industry, despite its prevalence in public discussion, has received significantly less attention in academic research. Within the international business (IB) context there are very few academic studies that seek to analyze and compare the different geographical mobile phone markets from the viewpoint of competition.

This thesis examines competition in the mobile phone markets of the United States and Europe in light of interviews and secondary data covering years 2002 - 2011. The framework used for the analysis is founded on concepts drawn primarily from industrial organization (IO) economics, IB theory and micro-economics. The first part of the thesis gives an overview of the U.S. and European mobile phone markets and the second part focuses specifically on Nokia, its actions and performance on the U.S. market.

The findings reveal that the U.S. and European mobile phone markets are fundamentally different. Firstly, while in Europe several parallel sales channels exist, the U.S. market is dominated by mobile operators that control access to the end customer. Secondly, in the U.S. market phones are generally sold heavily subsidized and bundled, and either under the operator brand or co-branding agreements. In addition, the U.S. market has historically split in two technologies, GSM and CDMA, as opposed to Europe where GSM is the dominant technology.

The analysis of Nokia in the United States shows that the company's problems appear to be related to the very characteristics of the U.S. market and the way Nokia has reacted. First and foremost, Nokia has had a difficult relationship with the operators who have required tailoring, technology variations etc. In addition to its focus on GSM, Nokia seems to have refused to tailor for operators and insisted on sales under the Nokia brand. Finally, over the years, Nokia's situation has been complicated by occasional disputes related e.g. to immaterial property rights and recently problems in developing and having operators represent especially Nokia's high-end models.

Key words: Competition, mobile phone industry, United States, Europe

YHDYSVALTOJEN JA EUROOPAN MATKAPUHELINMARKKINOIDEN KILPAILU-ANALYYSI

Kilpailu taloustieteellisessä kontekstissa on laajasti tutkittu ilmiö, jonka alueella on tehty mittava määrä tieteellistä tutkimusta. Matkapuhelintoimialan kilpailu sen sijaan, huolimatta sen saamasta yleisestä huomiosta, on jäänyt merkittävästi vähemmälle huomiolle akateemisessa tutkimuksessa. Kansainvälisen liiketoiminnan alueella on julkaistu vain vähän tutkimuksia, jotka analysoisivat tai vertailisivat eri maantieteellisiä matkapuhelinmarkkinoita kilpailun näkökulmasta.

Tässä työssä tarkastellaan kilpailua Yhdysvaltojen ja Euroopan matkapuhelinmarkkinoilla haastatteluihin ja sekundääriseen lähdeaineistoon pohjautuen kattaen vuodet 2002 - 2011. Työssä käytetty analyttinen viitekehys pohjautuu teollisten organisaatioiden taloustieteen (IO), kansainvälisen kaupan ja mikrotaloustieteen malleihin. Työn ensimmäinen osa luo katsauksen USA:n ja Euroopan matkapuhelinmarkkinoihin, kun taas toinen osa keskittyy Nokiaan, sen toimiin ja menestykseen Yhdysvalloissa.

Työn tulokset osoittavat USA:n ja Euroopan matkapuhelinmarkkinoiden poikkeavan oleellisesti toisistaan. Ensiksi, Euroopan markkinalla on lukuisia rinnakkaisia myyntikanavia, kun taas Yhdysvalloissa operaattorit dominoivat jakeluketjua ja kontrolloivat pääsyä loppuasiakkaalle. Toiseksi, USA:ssa puhelimet myydään tyypillisesti operaattorin tavaramerkille räätälöityinä ja vahvasti subventoituina kytkeyden ollessa pääasiainen toimintamalli. Lisäksi, Yhdysvaltojen markkina on jakautunut GSM ja CDMA teknologioihin, kun taas Euroopassa GSM on ollut hallitseva.

Työn aineiston analyysi osoittaa, että Nokian ongelmat ovat liittyneet erityisesti Yhdysvaltojen markkinan erityispiirteisiin ja siihen, miten Nokia on toiminut suhteessa näihin. Eritoten Nokialla on ollut vaikeuksia operaattorisuhteissaan liittyen puhelinten räätälöintiin operaattoreille, teknologia-variantteihin jne. GSM:ään keskittymisen lisäksi vaikuttaa, että Nokia on ollut haluton mukauttamaan puhelimiaan operaattorien vaatimukseen ja vaatinut oman tavaramerkkinsä käyttöä. Vuosien mittaan Nokian tilannetta ovat myös vaikeuttaneet riidat liittyen immateriaalioikeuksiin ja viimeaikaiset ongelmat kalliimpien mallien kehityksessä ja saattamisessa operaattorien myytäväksi.

Avainsanat: Kilpailu, matkapuhelintoimiala, Yhdysvallat, Eurooppa

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1. Introduction

The introduction of the 1st generation of mobile handsets and networks in the early 1980s started a gradual but irreversible process that has fundamentally changed the way people communicate. What was originally seen as a complementary and later substitute means to fixed-line telephony has over the 2nd, 3rd and now 4th generation of mobile communications transformed into an irreplaceable part of people's lives in every continent with close to 4,6 billion worldwide users (ITU, 2010) and global annual unit sales exceeding 1,1 billion in 2009. (Nokia, 2010c) Where in developing countries calling and basic messaging still dominate, in more advanced countries phones are used in many professional and personal contexts including, for example, exchange of e-mails, photography, Internet and social media.

This tremendous change has been enabled by technological advances in areas such as electronics and telecommunications produced by hundreds of universities and companies around the world, but still much of the credit should be directed to those companies involved in the very business. Mobile handset manufacturers, Nokia in the forefront, invest tens of billions of euros each year and employ tens of thousands of people in positions related to handset development. As of December 21, 2009, Nokia alone employed 17 196 people in research and development (R&D) with R&D related expenses totaling 5,909 billion euros. (Nokia, 2010b) Recently, however, the standardization of electronic components and increase in in-built processing power has shifted R&D focus strongly from hardware to software favoring companies traditionally strong in software R&D.

In part due to the transformation of the mobile phone industry, the competition in handset manufacturing has become increasingly intensive and aggressive. The increased software focus has lowered barriers to entry related to hardware expertise and attracted several new entrants such as HTC, Apple and Google to the market. Simultaneously, the mobile phone business has moved towards competition of mobile eco systems

comprising phones, mobile operating systems, application stores, cloud services, etc. further increasing the complexity and dynamic nature of the industry.

This transformation has taken place gradually over a few years on all technologically advanced markets including Europe and the United States. Even though the two markets present similar levels of sophistication in terms of actors, purchasing power etc. the development of these markets has taken two different routes both technology-wise and related to market structure and competition. While in the European mobile phone market handset manufacturers utilize a wide range of marketing and distribution channels to reach the end customer, the mobile operator dominance over the distribution network in the United States forces handset manufacturers to cooperate with the operators who constitute the only major sales channel.

In addition to the differences in the market composition the European and U.S. operators have partly opted for different cellular technologies. While in Europe, the Global System for Mobile Communications (GSM) has been the dominant technology, two out of the four biggest U.S. operators have adopted a competing technology Code Division Multiple Access (CDMA). These and other more subtle differences of the European and U.S. mobile phone markets have necessitated distinct approaches to each market on the part of the handset manufacturers.

This thesis contributes to the on-going discussion on competition and competitive dynamics in the mobile handset industry by carrying out an analysis of the markets of Europe and the United States with a special focus on the case of Nokia in the United States. Especially, the thesis will make an effort to analyze the roots of Nokia's failure to gain and retain its market share in the United States despite its dominant position in most of the world.

1.1. Research gap

Despite the extensive news coverage (see Appendix II) and the scope of market and company analyses on the mobile handset industry, the availability of rigorous academic research is scarce. This is especially true in regard to analyses that focus on the European and U.S. mobile phone markets and/or the performance of individual companies in these markets. This is a finding of interest since, somewhat surprisingly, the mobile operator industry (as opposed to the mobile handset industry) has already gained significant academic attention and the body of research is substantial. This research covers wide range of topics, for instance, competition between operators (Cricelli, Grimaldi & Ghiron, 2008; Fernández & Usero, 2009), operator strategies (Peppard & Rylander, 2006; Kiiski. & Hämmäinen, 2004), and customer retention and loyalty (Kim & Yoon, 2004; Gerpott & Rams, 2001).

Another neighboring industry with a solid research base is the personal computer (PC) business. Bresnahan & Greenstein (1999) analyzed the technological competition in the PC industry focusing on the importance of platforms (e.g. Apple Macintosh vs. IBM). This research could serve as a basis for similar research related to the operating systems or application development environments in the mobile handset industry. Other studies have focused e.g. on the effect of advertising in the PC industry (Goeree, 2008) and on the formation of the industry in the United States (Haigh, 2010). Malerba et al. (2008) presented a model for analyzing the varying vertical integration of computer firms over time. It should still be noted that the research on mobile operator and PC industries is not, obviously, directly applicable to the mobile handset industry. However, these studies function as a point of comparison when investigation the same phenomena in an unstudied industry.

Recent research on the mobile handset industry has focused mostly on a few major research streams. Hess (2006), Li (2002), Maitland (2002) and Funk (2009) have analyzed the value chain structures of the mobile phone industry globally, in Europe and Japan, respectively. Rouvinen (2006) and Gao (2009) have looked at the industry

and its development from the perspective of developing countries while several authors including Xie & White (2006) and Lie et al (2009) have given special attention to the Chinese market. Another major research stream related to the handset market is that of subsidies. Several authors e.g. Kim et al. (2004) and Tallberg et al. (2007) have analyzed the effect of mobile phone subsidies on the industry and competition from different viewpoints. Obviously, a great number of other topics have been researched related to the mobile industry such as new product development by Koski & Kretschmer (2010) and industry ecosystems by Gueguen & Isckia (2010) and Basole (2009).

Among the very few analytical articles with a focus on the handset market and manufacturers is that of Zhang & Prybutok (2005) “How the Mobile Communication Markets Differ in China, the U.S., and Europe”. This article makes an attempt to summarize the main macro level differences of the three markets including standards, price structures, regulation, demographics, usage patterns, business potential, and technology adoption. Still, despite being written by two professors in the field, this letter type magazine article is directed to a very broad audience and cites practically no academic studies. Another attempt to capture some attributes of the competition between companies is that of He et al. (2006) where they analyze the process by which Ericsson, Nokia and Samsung caught up with the once-leader Motorola technology-wise.

Thus, it appears that regional mobile phone markets, especially Europe and the United States, are practically untouched from the viewpoint of competition between companies. However, several non-academic books have been written (Hyöty, 2011; Steinbock, 2010, Hakkarainen, 2010; Steinbock, 2003; Burnham, 2002) and numerous consultancies produce yearly or even quarterly analyses of the industry (Gartner, IDC, Strategy Analytics, Nordic Partners). Still, these publications are not intended as academic research and often normative in nature.

1.2. Research questions

The primary aim of the thesis is to gain understanding of the characteristics of the European and the U.S. mobile phone markets from the viewpoint of competition. In order to gain additional insight into how these characteristics affect the companies, a special case focusing on Nokia in the United States will be investigated.

The main research questions can be summarized as follows:

- 1) What are the specific characteristics of the European and the U.S. mobile phone markets?
- 2) In what respect are the two markets fundamentally different and why?
- 3) Why has Nokia been unsuccessful in the U.S. market?

1.3. Structure of the thesis

The thesis is organized as follows. In Chapter 2 a literature review and the theoretical framework are presented. Chapter 3 reviews the structure of the mobile phone value system and the historical development and current state of the European and the U.S. mobile phone markets. Chapter 4 provides a discussion on the chosen methodology and case study procedure while Chapter 5 reviews case study findings. Chapter 6 concludes the thesis with theoretical and managerial implications, limitations and directions for future research.

2. Theoretical background

This thesis utilizes two highly interrelated and well established fields of business research. Firstly, the main goal of the work is to analyze the competitive situation in the mobile phone industry in the European and U.S. markets. This aim will be approached by means of classical competition theories (Industrial Organization, IO) and relevant frameworks (Porter's five forces) discussed in Section 2.1. Secondly, the thesis seeks to find explanations for Nokia's unsatisfactory performance in the United States by means of case analysis. The applied case methodology is described in Chapter 4.

2.1. Analytical framework

As the main objective of this thesis is to analyze the European and the U.S. mobile phone markets, the selected framework supports this aim by approaching the markets on two different levels. Primarily, the analytical framework focuses on micro-environment i.e. looking at the markets from the viewpoints of the actors (suppliers, distributors, customers) and from that of competition. To analyze the contribution of each of these actors and other sources of competition, another well-established model, Porter's five forces, will be utilized (Section 2.3). Where necessary, the observed phenomena are also interpreted from a wider, macro environmental perspective although more detailed analysis of macro-environmental factors will be omitted. The exclusion is justified by the fact that competition, even though influenced by the macro environment, takes place within the micro environment. In addition, concentrating on the micro-environment allows a broader and more in-depth treatment of the most relevant actors present in the micro-environment.

On another dimension, the framework applies two different conceptual approaches, namely, international business (IB) environment and industrial organization (IO) economics. These approaches together serve to supplement the strongly microeconomics focused framework with suitable concepts grounded in the strongly

related IB and IO disciplines. While the industrial organization focuses on the company/market boundary from the perspective of imperfect competition, international business focuses on the qualities of international markets and companies operating across country boundaries. These approaches will be discussed in detail in Section 2.4.

The analytical approach of the thesis is summarized in Figure 1.

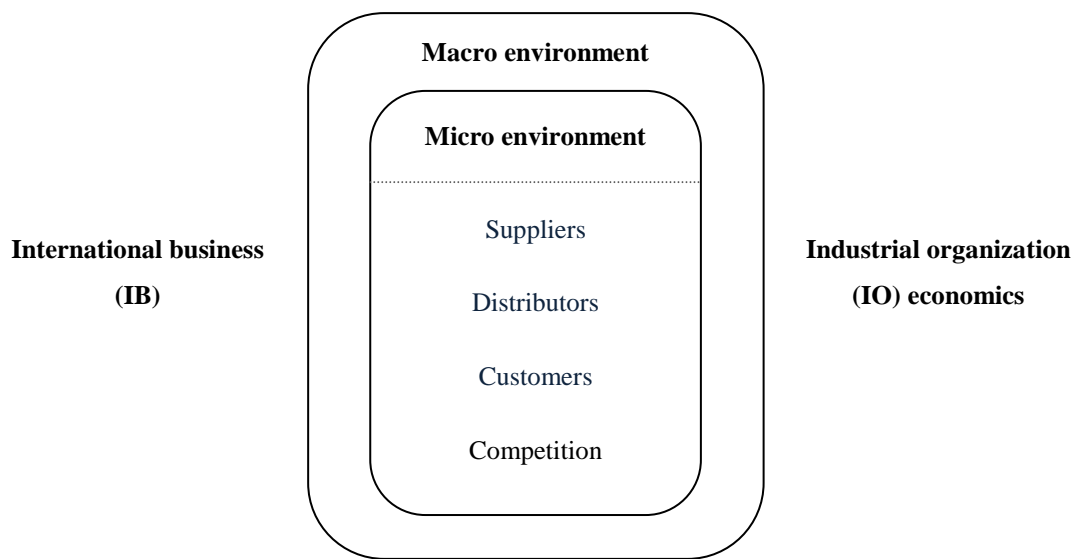


Figure 1. Analytical framework of the study

2.2. Macro-environment

By definition, the macro-environment involves factors outside of the direct control of the business. These factors, then, include the economy, government policies, social changes etc. A firm may, for example, be influenced by new legislation or changes in taxation policies but the firm rarely has power to shape them itself. Thus, macro factors have the ability to fundamentally change the environment of an organization but the relationship is typically one way. (Gillespie, 2007) One of the most utilized frameworks to analyze the macro factors is the PESTEL analysis.

The PESTEL framework stands for “Political, Economic, Social, Technological, Environmental and Legal” and is used for analyzing the macro-environment in which

companies operate and which also significantly affects each business independent of its size (Johnson et al., 2006:65) Similar acronyms such as ETPS, STEP, PEST, and STEEPLE are often used (CIPD, 2011) in each case including (or excluding) some factors and giving more weight to some in comparison to others. However, it always aims at capturing the essential of the macro-environment under a few broad categories to facilitate understanding and management of each factor within the business and to identify the key drivers of change (Johnson et al., 2006:69).

Typical examples of the PESTEL factors are given in Table 1.

Table 1. Components of the PESTEL analysis (Gillespie, 2007)

| Factor | Issues |
|---------------|--|
| Political | EU enlargement, the euro, international trade, taxation policy |
| Economic | Interest rates, exchange rates, national income, inflation, unemployment, Stock Market |
| Social | Ageing population, attitudes to work, income distribution |
| Technological | Innovation, new product development, rate of technological obsolescence |
| Environmental | Global warming, environmental issues |
| Legal | Competition law, health and safety, employment law |

Even though the macro-environment will not be analyzed in detail in this thesis its influence in a company's decision making processes is evident as well as its ability to change to conditions under which competition takes place. For example, the Finnish government's decision to allow bundling of mobile phones had a direct impact on both handset manufacturers' and mobile operators' business. Thus, references to the macro-environment and changes in it will be made alongside the analysis on companies and their micro-environment.

2.3. Micro-environment

The micro-environment can be defined as consisting of "stakeholder groups that a firm has regular dealings with" (Gillespie, 2007). For the purpose of this thesis, the focus will be on suppliers, distributors, customers and competition as illustrated in Figure 1 following the concise definition of micro-environment by Gillespie (2007).

Suppliers

In regard to its suppliers, any company generally needs to address questions such as “Can they provide the quality we require at a good price?”, “Can they adjust to changes in the supply volume?” and “What is our power relative to our suppliers and vice versa?” Increasingly, however, large multinational companies in particular are concerned about the ethicality of their suppliers’ operations. Recently, for example, Nokia was alleged to have used so called ‘blood metals’ in their mobile phones, to which Nokia responded by implementing yet more stringent systems to track the origin of its raw materials (Yle, 2010).

Especially in the business of mobile phone manufacturing, suppliers and supply chain management (SCM) play a crucial role. Since mobile phones, smart phones in particular, contain numerous highly specialized components and modules, handset manufacturers generally acquire most of the components, software and even assembly from their suppliers and subcontractors (see the mobile phone value system in Figure 9). Nokia, for example, lists 35 countries as its main supplying locations and applies its so called Code of conduct to all its business partners. In the Code of conduct (Nokia, 2011f) Nokia states that

“...Nokia encourages its partners, subcontractors, or suppliers to strive beyond legal compliance in areas such as governance, human rights and the environment. Nokia incorporates ethical, social and environmental criteria in its procurement agreements and commits to monitoring the performance of its partners and to taking immediate and thorough remedial steps in cases where the ethical performance of its business partners comes into question.”- Nokia 11.1.2011 (Nokia, 2011f)

Thus, mobile phone manufacturers rely on suppliers to varying but generally great extent and can even be held responsible for choosing suppliers that use e.g. child labour or non-recyclable materials. To construct an iPhone, Apple, for example, sources its Retina display from LG, the A4 processor from Samsung, gyroscopes from STMicroelectronics, touch sensitive panels from Wintek and TPK, and chips from

Skyworks Solutions and TriQuint Semiconductor (AppleInsider, 2010). However, some conglomerates, e.g. Samsung manufacture most of the modules in-house which enables cutting down the number of suppliers and facilitates integration in the production process. Even if the recent business wisdom has advised companies to divest non-core functions and focus on a few core competencies, Samsung has proven that conglomerates may be highly profitable while retaining their non-core parts. Unlike Motorola, Samsung kept its component manufacturing in-house and focused on synergies from producing both components and end products. (Hyötty, 2011:250-252)

Distributors

The second essential element of a company's micro-environment is distributors. The choice of distribution channels is critical for a number of reasons. Firstly, the distributors strongly influence the final sales price of each product and thereby directly affect the sales quantity. Second, the distributors and later retailers play an important role in how the product is presented to the customer and, to some extent, how it is positioned relative to competing products. Finally, the choice of the distribution channel affects how customers perceive the brand. While Nokia, for example, utilizes a wide range of sales channels for its Nokia branded products, it sells its luxury phone brand Vertu (typically gold and diamond decorated, ranging from \$6000 to \$300 000) only in Vertu and Nokia flagship stores (Vertu, 2011; Dialaphone, 2007)

In the mobile handset business, the distribution channel plays a crucial role. While in Europe most mobile phone manufacturers rely on a large number of individual distributors and retailers, in North America the bulk of handset sales is carried out by mobile network and virtual operators (see Figure 22). The long-lasting dominance of mobile operators over distribution in the United States has allowed them to introduce additional requirements related to e.g. tailoring and branding of phones, and together with subsidies a commanding position in the industry. Still, the choices related to distribution come down to the same basic questions, i.e. what are the total costs, how is the brand communicated, how flexible is the distributor etc.

Customers

The third element of the company's micro-environment is customers. In this respect, it is common to separate between individual consumers and organizational (or industrial) customers (or buyers). While consumers are traditionally considered less rational and impulsive in their decision making process, companies tend to be viewed as professional buyers following strict budget, cost and profit considerations. (see e.g. Webster & Wind, 1972; Baumgartner & Steenkamp, 1996) These kind of clear differences in purchasing behaviour have been questioned (Wilson, 2000) and today's B-to-B marketers widely recognize that emotions play an important role also in business buying decisions (Kotler & Armstrong, 2006:178).

In the mobile phone business, consumers represent an enormous variety of tastes, preferences and affluence. In developing countries, the sales of low-end mobile phones (often under \$50) dominate, while in developed markets of e.g. Europe and North America, consumers often opt for more advanced models incorporating cameras, GPS navigation, Internet browsing etc. Moreover, most of these consumers appreciate value added features and post-purchase services provided by the manufacturer (e.g. Apple App Store, Nokia Ovi Store and Google Android Market) and often base their purchase decision on the combination of the phone and the availability of these services (see e.g. Singh & Goyal, 2009). Industrial buyers, on the other hand, tend to value services related business use of the phone (e-mail, data security etc.) and supplier's ability to provide a communications solution to the company instead of only handsets.

Finally, with regard to the mobile phone industry in Europe and the United States, there are some significant differences in customer profiles. While in Europe a handset manufacturer can sell both directly to the consumer and via distributors and retailers, in the United States the only major customer is the operator that, then, functions as a distributor and retailer. This, obviously, has its effect on what kind of marketing is needed to reach the end customer.

Competition

The Merriam-Webster dictionary defines competition as "the effort of two or more parties acting independently to secure the business of a third party by offering the most favourable terms". (Merriam Webster Online, 2011) Correspondingly, The New Palgrave Dictionary of Economics states that "competition arises whenever two or more parties strive for something that all cannot obtain." (Stigler, 2008) In this thesis, these competing "parties" are handset manufacturers who act to "secure the business" or "strive for" the limited resource, i.e. the money, of their customers.

In terms of developed economic theory, competition is one of the most researched areas of economics. Economists generally differentiate perfect and imperfect competition, concluding that no other system is more Pareto efficient than perfect competition. According to Organisation for Economic Co-operation and Development (OECD, 1999) perfect competition is defined by four conditions:

- a) There are such a large number of buyers and sellers that none can individually affect the market price. This means that the demand curve facing an individual firm is perfectly elastic.
- b) In the long run, resources must be freely mobile, meaning that there are no barriers to entry and exit.
- c) All market participants (buyers and sellers) must have full access to the knowledge relevant to their production and consumption decisions.
- d) The products should be homogenous.

Imperfect competition, thus, occurs when any of the criteria for perfect competition is not satisfied, e.g. when there is information asymmetry between buyers and sellers, either buyers or sellers are able to influence prices or products are not homogenous.

In regard to the mobile phone industry, there is a clear case of imperfect competition. Firstly, the three largest manufacturers Nokia, Samsung and LG held about 64 % of the global unit sales in Q1/2010 while the tenth largest Huawei had 1,3 %. (Gartner, 2010) This kind of a market situation is generally referred to as an oligopoly "in which

producers are so few that the actions of each of them have an impact on price and on competitors” (Merriam Webster Online, 2011). Second, there are fairly high barriers to entry due to the capital intensive nature of the business. In addition, gaining market share generally requires significant investments in marketing and established manufacturers can benefit from advantages of scale.

The third criteria dealing with information symmetry and completeness might not far from what is required for perfect competition. The mobile phone industry is well covered in media and each major product launch is quickly followed by technical analyses of the products and comparisons to the other products on the market. On the manufacturer side, due to the mere size of the companies, they can be considered to, at least, have resources to produce the information they need to make justified production decisions. Yet, it should be noted that critical views exist as to the media's ability to provide the consumers with unbalanced and reliable information on the handset market (see e.g. Ahonen 2010; Wilcox 2010)

Finally, the last criterion related to the homogeneity of products can easily be rejected in the handset market. The companies have highly differentiated products in terms of design, capabilities, operating system, brand qualities etc. This is especially true for high end phones such as Apple iPhone, Samsung Galaxy S or Nokia N8. However, in more standard feature phones, the existence of close substitutes could be justified and the competition in this area closer to perfect. This claim finds ground in the significantly smaller profit margins available to the producer (see e.g. Elmer-DeWitt, 2010).

Even though the competition in the handset industry is imperfect, it is still fierce and highly dynamic. For the purpose of this thesis, and to gain an insight into the components of competition, the Porter's Five Forces –model will be applied (Figure 2).

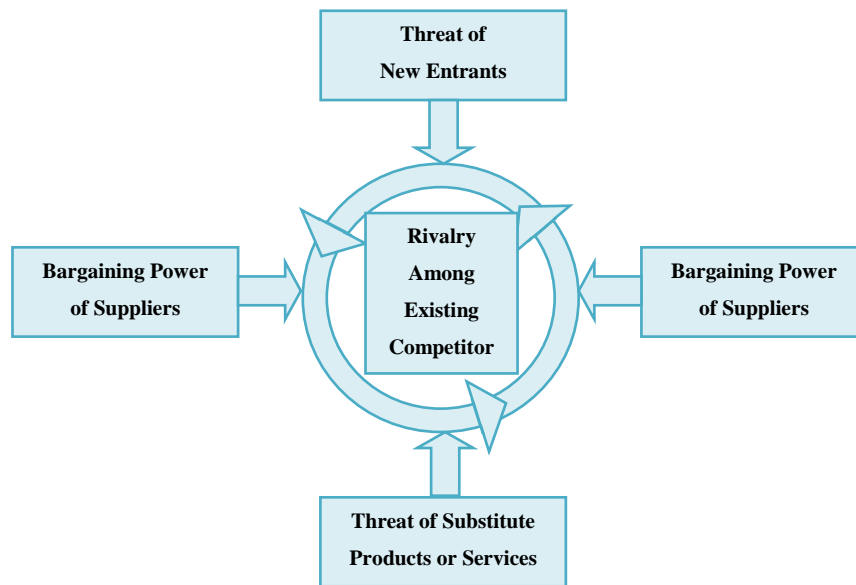


Figure 2. Porter's Five Forces -model (Porter, 1979:141)

According to Porter (1979:137) the Five Forces -model presents the five forces which together determine the competitive intensity of a company's micro-environment (or industry). A highly unattractive industry would be one where all the five forces are strongly present, presenting similarities to perfect competition. The model draws upon Industrial Organization (IO) economics which will be briefly reviewed in Section 2.4. A five forces analysis of the mobile phone markets of the United States and Europe is carried out in Section 3.2.

The Porter's five forces model has been criticized, for example, for its underlying assumptions. Firstly, an industry is assumed to consist of an unrelated set of buyers, sellers and substitutes and competitors that interact at arm's length. Second, companies can gather wealth that allows them to erect barriers against existing competition and new entrants thereby creating structural advantage. Finally, the prevailing uncertainty is assumed low enough to permit predictions about the participants' behavior and choose a strategy accordingly. (Coyne & Subramaniam, 1996:30-31). In addition, one should also note that the model was developed more than 30 years and, since then, new industries have been born and the old ones taken new shapes. Sheenan (2005: 53-60) argues that the classical model such as the Five Forces and value chain analysis were

designed for the analysis of traditional industrial firms and do not apply well to today's knowledge-intensive companies.

The rationale for choosing the Five Forces framework was as follows. The model was to be well-known and tested. Even though Porter's model has been criticized for its applicability to certain industries and for its assumptions, few models have gone through such thorough testing and prevailed. While no model is perfect the limitations of the Porter's framework are, nevertheless, well-known and documented. Finally, the use a widely accepted framework facilitates reading and interpretation of the results as opposed to some other model with less prevalence and academic/practitioner interest.

2.4 Conceptual approaches

As illustrated in Figure 1, the thesis framework is founded on two conceptual approaches, namely international business and industrial organization economics. In this section, a brief overview of the approaches and their applications in the mobile phone industry will be given.

Industrial organization economics

According to Cabral (2000:3) IO economics is a discipline that is concerned with "the workings of markets and industries, in particular the way firms compete with each other". Moreover, he notes that whereas microeconomics focuses on the extreme cases of monopolies and perfect competition, IO is "concerned primarily with the intermediate case of oligopoly, that is, competition between a few firms" and could be defined as "economics of imperfect competition". These definitions well apply to the case of mobile phone industry where a few large companies compete in the market both in Europe and the United States, and where products are partial substitutes but also significantly differentiated.

The IO economics supplements the model of perfect competition by including imperfections related to entry barriers, asymmetric information, transaction costs etc.

which together inevitably lead to imperfect competition. Moreover IO studies how firms, under these conditions, are organized and how they compete. (Cabral, 2000) Regarding these competitive actions, the research in IO has focused, for instance, on product differentiation (Shaked & Sutton, 1982), game theory (Bagwell & Wolinsky, 2002), oligopolies (Stigler, 1964; Fershtman & Judd, 1987) and pricing strategies (Diamond, 1971). It should be noted that IO is also a highly dispersed discipline presenting different views and schools of thought (see e.g. Conner, 1991).

A central paradigm in IO economics is based on the structure conduct performance (SCP) hypothesis (Bain, 1968; Mason, 1939) whose main idea was that “industry structure determined the behaviour or conduct of firms, whose joint conduct then determined the collective performance of the firms in the marketplace.” (Porter, 1981) Within the traditional IO paradigm performance encompassed dimensions such as technical efficiency (cost minimization), allocative efficiency (profitability) and innovativeness while conduct entailed company’s decisions on variables such as price, advertising, and quality. Finally, structure was considered a fairly stable set of economic and technical variables under which competition occurred. (Bain, 1972)

The IO theory is considered limited in some respects (see e.g. Porter, 1981) and some studies question the applicability of the SCP model to certain industries (e.g. Evanoff & Fortier, 1988). In some cases a given structure may not result in theoretically anticipated conduct and performance. For instance, intense rivalry in an oligopolistic market may result in conduct and performance similar to what is considered a property of the perfectly competitive model. Secondly scale economies occasionally available to oligopolies may lead to better economic efficiency under perfect competition. Finally, IO research has traditionally mostly focused on structure and performance paying considerable less attention to conduct due to data and measurement problems. (Scarborough & Kydd, 1992; French, 1977)

Despite the criticism, there are a great number of studies where the IO and the related SCP frameworks continue to be applied (see e.g. Kang, 2009; Luan & Browne, 2008). In regard to the mobile handset industry, both IO theory and the related SCP paradigm

can be used to explain, for instance, the structure of the industry, characteristics of (imperfect) competition and competitive actions taken by companies. Further analysis of the competitive situation within the industry will be carried out specifically in chapters 3 and 5.

International business

As the thesis aims at capturing the essential qualities of an extremely international (or global) market of mobile phones, the holistic framework presented in Figure 1 is complemented by the concepts, models and theories offered by the International Business (IB) discipline. While the micro- and macro-environmental frameworks offer two levels of analysis and IO tools for analyzing imperfect competition, the IB provides the methodology related to companies, multinationals in particular, operating in international markets having highly varying characteristics.

History

International business could be defined as the “study of transactions taking place across national borders for the purpose of satisfying the needs of individuals and organizations”. (Rugman & Collinson, 2009) The history of international business as an academic discipline dates back to the post World War II era in the 1950s, when most international operations were carried out by companies’ international divisions and true MNEs were few. At that time the research emphasis was still very general and interdisciplinary while most professors had backgrounds in economics or general business. (Rugman & Collinson, 2009; Shenkar, 2004)

During the 1970s and 1980s, the study of international business saw a substantial change. The economic growth of Europe and Japan led to increasing interest in international business operations throughout the developed world. Simultaneously, IB as an academic field gained momentum and an increasing number of scientific articles were written. The era was still dominated by studies in very specific areas and a demand existed for a broader, strategic focus. (Rugman & Collinson, 2009; Shenkar, 2004)

In the 1990s, international business began to adopt concepts from the closely related strategic management discipline bringing the dispersed field together. The previous interdisciplinary and functional approaches were now being supplemented by a multidisciplinary approach incorporating and drawing information from a variety of related disciplines (finance, economics etc.) which all affected international business. This development since 1950s is summarized in Table 2. (Rugman & Collinson, 2009)

Table 2. Comparative differences in the study of international business 1950-2010 (adapted from Rugman & Collinson, 2009). LDC = Least Developed Country, NIC = Newly Industrialized Country

| Topic | 1950-1969 | 1970-1989 | 1990-2010 |
|--------------------------------|------------------------------|--|---|
| Focus of interest | General information | Functional areas of development | Strategic emphasis |
| Approach to studying IB | Descriptive | Analytical | Integrative |
| Method of explanation | Heavily historical | Functional | Multidisciplinary |
| Research emphasis | Interdisciplinary | More quantitative research methods and overseas travel | Quantitative research methods, overseas travel, and international assignments |
| Enterprise viewpoint | US enterprises | MNEs | Networks |
| Countries examined | Industrialized | Industrialized, NICs, and LDCs | Industrialized, NICs, and LDCs |
| Journal emphasis | General international topics | Functional | Functional and strategic |

Thus, historically, a significant body of IB literature has focused on areas such as globalization, national competitiveness (e.g. Porter, 1990), foreign direct investment (FDI), cultures (Hofstede, 2001), economics of international trade, international financial markets etc. However, since the focus of this thesis is on a single industry and more specifically on the situation of a single company within that industry, most focus will be directed on MNE strategies and industry level analysis. The analysis, then, extends over several key areas of international business, a brief review of which will be presented in what follows.

International business operation modes

Foreign operation modes (or methods) deal with how a company organizes its operations in a foreign location. In principle, foreign operation modes can be divided into contractual modes, exporting and investment modes as illustrated in Figure 3 (Welch 2007:4).

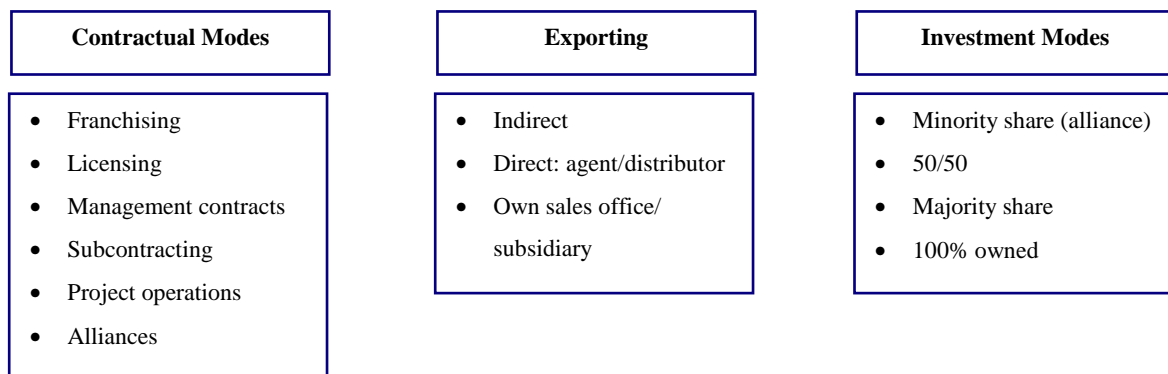


Figure 3. Major foreign operation method options (Welch et al. 2007:4)

It should be noted that alternative categorizations of the operation modes exist (see e.g. Luostarinen, 1989; Root, 1994). However, in what follows, the classification in Figure 3 shall be followed due to its capability to summarize the basic options available for an MNC.

The choice of the operation mode(s) is critical for any company since it greatly influences the way the company can perform international operations in its selected location. While choosing, for example, indirect exporting obviously limits risk and requires less capital, it cannot match the control and presence in the foreign market offered by most investment modes (100% owned at the extreme). Obviously, the bigger the company the more resources it can allocate and the more freely it can choose its operation mode. MNEs generally operate using a combination of various operation modes. An attempt to summarize the fairly complex operation mode decision has been given by Welch (2007:442) in Figure 4.

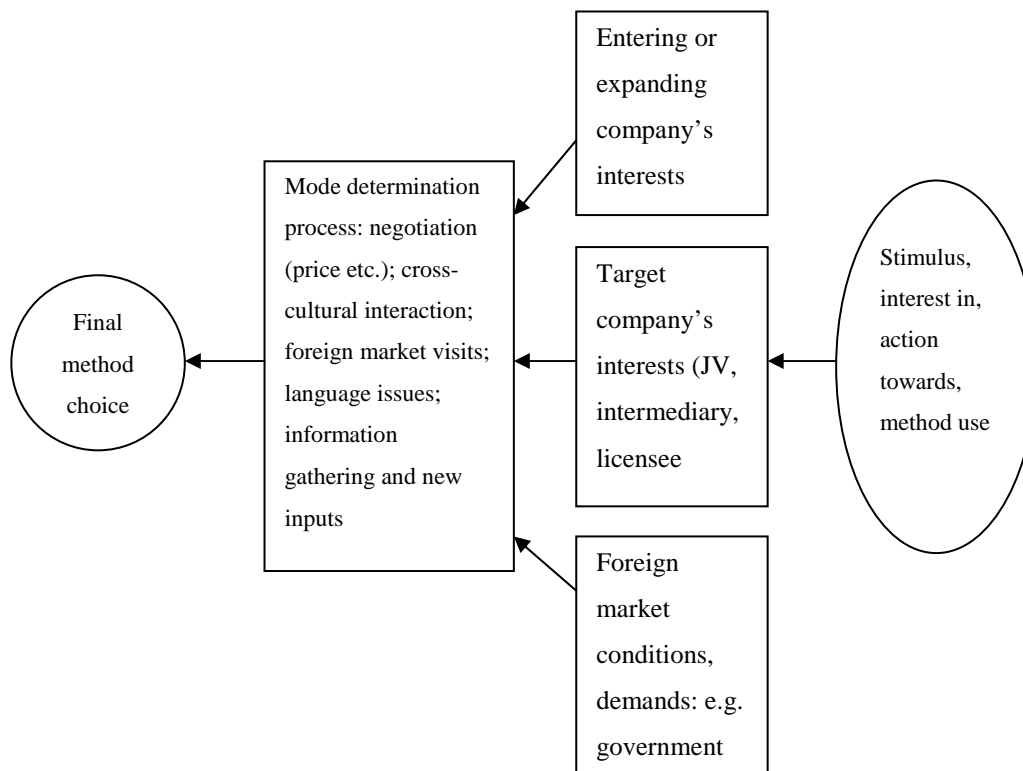


Figure 4. Foreign operation method choice (Welch 2007:442)

In the mobile phone industry, major companies operate using an extensive set of different operation modes. Nokia, for instance, has factories, R&D and sales offices all around the world. The factories are mostly concentrated in low-cost countries (e.g. China, India and Hungary), while most R&D is carried out in countries with advanced research and R&D infrastructure such as the United States, Switzerland, Germany and Finland. (NRC 2011) It should be noted, however, that in 2001 Nokia established a research institute in Brazil (iNdT, 2011) and in 2005 already its sixth R&D unit in China. (Physorg, 2005) On top of these investment mode operations, Nokia utilizes subcontracting of chipsets, project operations when building mobile phone networks (under NSN), alliances e.g. with Microsoft and Siemens, own sales offices (Nokia stores) etc.

Globalization impact and firm response strategies

(Economic) globalization could be defined as the “integration of national economies into the international economy through trade, direct foreign investment (by corporations and multinationals), short-term capital flows, international flows of workers and humanity generally, and flows of technology” (Bhagwati, 2004). Although globalization could be viewed from a wider viewpoint referring to e.g. cultural globalization or even homogenization of tastes and people, for the purpose of this thesis only the economic interpretation (above) is considered.

In regard to the mobile handset industry, the impact of globalization has been very significant and, today, the mobile phone market can be considered truly global (although not homogeneous). Most of the large companies (Nokia, Samsung, LG etc.) are present in all continents and competing on the whole price range. The existence of a global market can be traced back to the absence of significant barriers of international business and the significant economic gains (scale and scope) that can be achieved from selling larger quantities. Still, the markets are not homogenous due to different income levels, tastes, adapted technologies and business models.

For an individual company, globalization means new markets and opportunities for growth beyond those available in the home market. However, these opportunities are available for all the companies that operate globally and, generally, companies do not anymore enjoy protection or preferred status in their home markets. However, internationality is in the very nature of mobile phone business and the company that can organize its operations most effectively across national borders can gain substantially.

International brand management

While *brand* could be defined as the “identity of a specific product, service or business” (Birkin 1994), *brand identity* constitutes “a set of attributes designed to distinguish a particular firm, product, or line, with the intention of promoting awareness and loyalty

on the part of consumers” (Oxford Dictionary, 2011). In the context of international business, international brand management would thus refer to the management of these attributes (slogan, product names, features, pricing, distribution etc.) of a brand or several brands when operating in international markets.

In an international setting, there are a significant number of variables that affect branding such as language and cultural differences, consumption patterns and legal and regulatory environments. (Rugman & Collinson, 2009) For example, Coca-Cola has made small adjustments (bottle size, labels etc.) to its main product, but also issued complementary brands such as Spritea, a tea-flavored drink that is a combination of Sprite and tea. (China Daily, 2011) In addition, to manage an international brand the company needs to assure that in each location the consumers perceive the brand in a desired way. McDonald’s, for its part, designs its product offering individually for each country serving McRuis (of rye bread) in Finland and only Halal meat products in Egypt. (McDonald’s Egypt, 2011)

In the mobile phone business, most large companies have opted for a single brand strategy. For example, Nokia operates globally under a single brand Nokia (although the niche high-end brand Vertu does exist (Vertu 2011)) and the unique “Connecting people” –slogan. However, it should be noted that Nokia differentiates and positions its products also on product line basis by having X-, N-, E- and C-series for mid- and high-end phones and numbered series (e.g. Nokia 2700 Classic) mostly for feature phones. In addition, Nokia has introduced additional brands such as N-Gage for gaming and cooperated in branding with e.g. Carl Zeiss in camera optics and Dolby in audio. (Nokia, 2011)

Finally, there are great many variables in the business environment that a company cannot control. For instance, the operator dominated environment of the United States has a significant impact on branding while most operators demand their brands to be visible on the phones.

International channel strategies

Once the firm has chosen an appropriate market entry mode for its foreign markets, it needs to decide how to organize distribution of its products within those markets. The channel decisions and the most important external determinants are summarized in Figure 5.

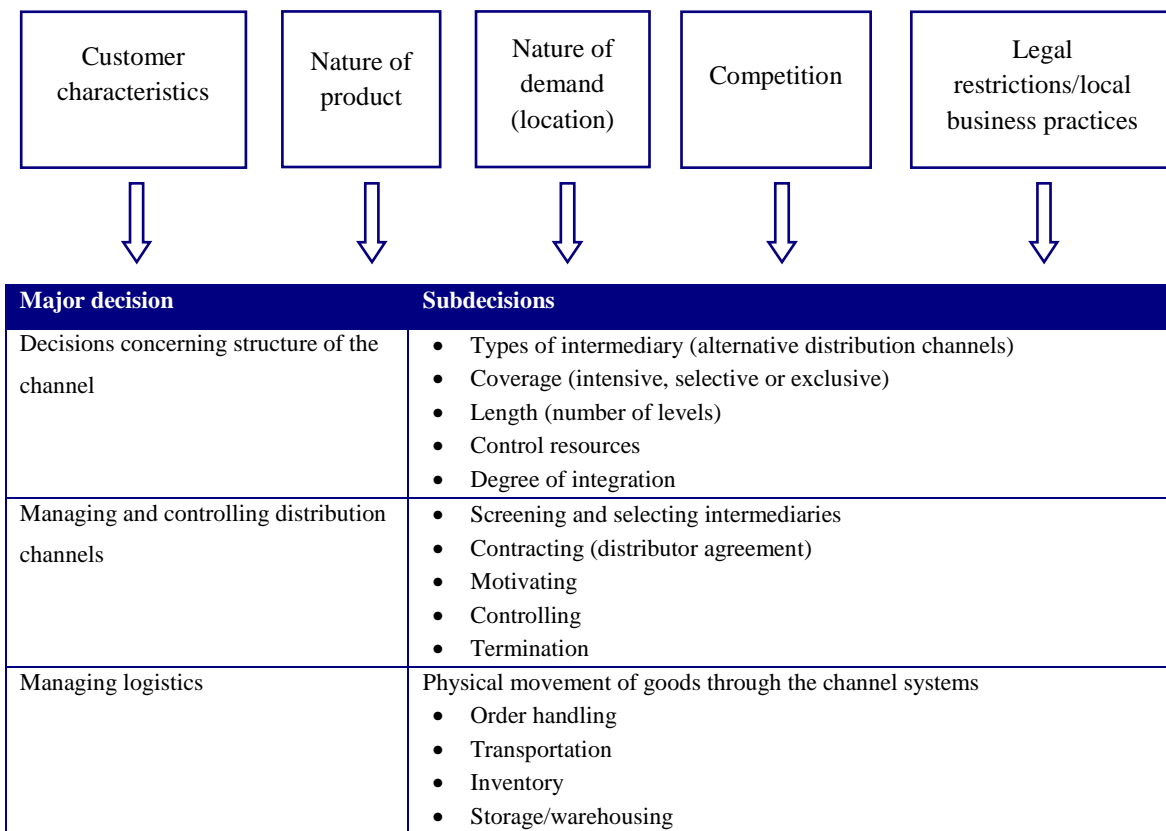


Figure 5. Channel decisions (adapted from Hollensen, 2007:507)

In the mobile phone business, channel strategies vary significantly both between companies and geographical locations. Apple, for example, is known to be very selective as to who is allowed to represent its products and carries out a large share of its sales through its own stores. Nokia, on the other, has pursued a less selective strategy distributing its products through various retailers, internet stores, operators etc. However, the sales of its luxury brand Vertu are organized through Nokia flagship stores only. Comparable phenomena were taking place in the mid-1990s when PC companies Dell and Gateway started cutting middlemen and distributing directly to the

end customer. The direct model allowed them, for example, to eliminate two layers of inventory and have control over pricing and branding (Dedrick & Kraemer, 2007:4). The indirect and direct distribution channels in the PC industry are illustrated in Figure 6.

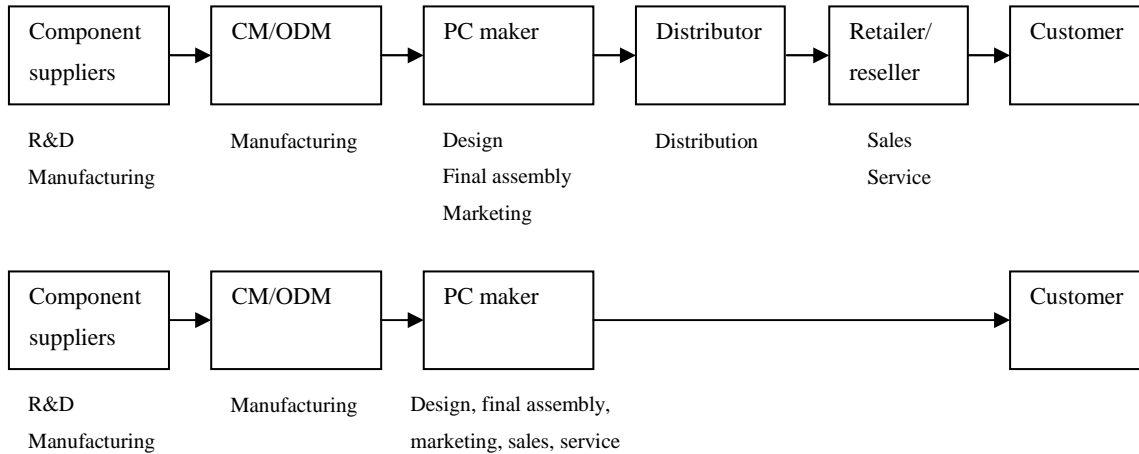


Figure 6. Indirect and direct distribution in the PC industry (Dedrick & Kraemer, 2007:5)

CM = Contract Manufacturer, ODM = Original Design Manufacturer

In some cases, the competitive landscape of a market strongly influences the available channel options. This is the case for example in the United States, where most of the sales are carried out through mobile operators and selling via other channels has proven to be difficult (see Sections 3.3-3.4). In Europe alternative channels are generally available since operators possess less power on the market. To cite an example of the distribution channel options available to a handset manufacturer, those of Nokia in China are given in Figure 7. The example focuses on China as similar research, at the time of writing, could not be found related to the European or U.S. markets.

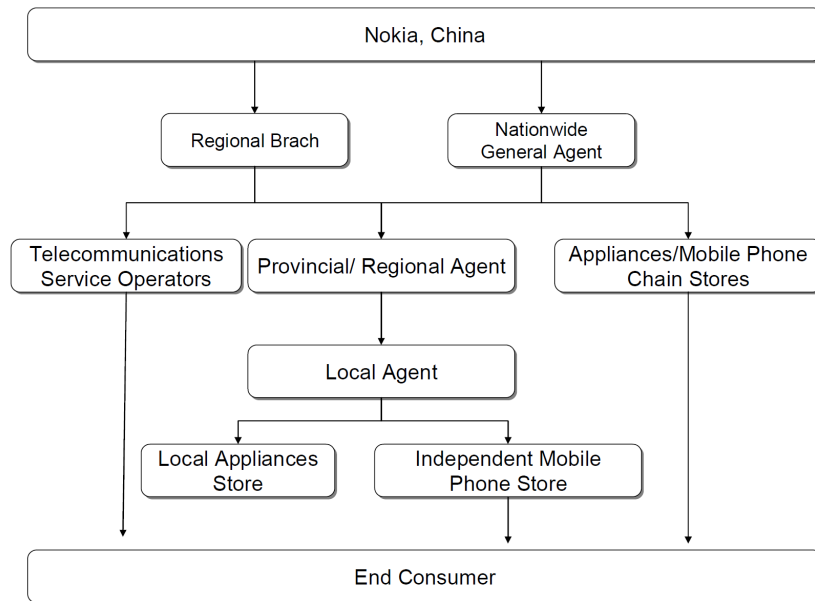


Figure 7. Nokia's distribution channels in China (Duan 2007:82)

As seen in Figure 7, Nokia utilizes a wide range of distributors and retailers on several levels to reach the end consumer. Obviously, by eliminating all the middle men, Nokia could reduce costs and gain control over distribution, but there are critical differences what comes to the two markets. Since mobile phones do not function without a connection to the network (that is provided by the network operator) a handset manufacturer will not be able to sell phones to consumers unless the consumers can freely choose the mobile operator. Even if this were technically possible, the pricing models applied by the U.S. operators typically make this financially unattractive to the consumer.

3. Market Description

While the European and U.S. mobile markets developed early and the demand on these markets is largely focused on high-end devices, applications etc. the fast economic growth and development of Asian countries has undeniably shifted the economic power to the East. As seen Figure 8, the Asia-Pacific region already in 2009 constituted a staggering 52,2 percent of the global sales volume, while Europe currently has around 27 %, the United States 11 % and the rest of the world a mere 7 %. (Datamonitor, 2010b:12) Taking into account the rapid growth rate of the Asia-Pacific economies it would seem probable that their dominance will only grow stronger.

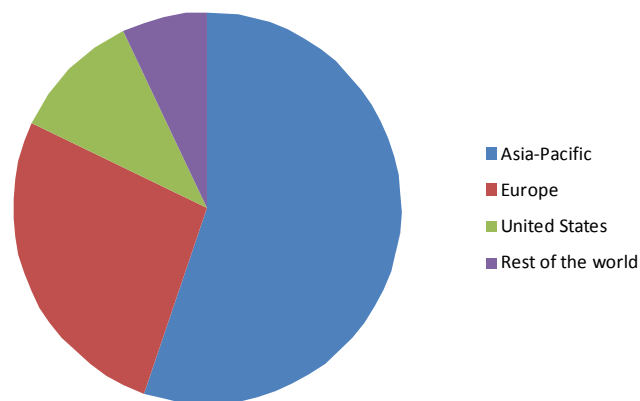


Figure 8. Global mobile phones market value by region in 2009 (Datamonitor 2010b:12)

In this chapter, a more detailed general description of the European (Section 3.3) and U.S. (Section 3.4) mobile phone markets is given. The discussion on the individual markets is preceded by a general description of the qualities of a generalized mobile handset market in Section 3.1 and a five forces analysis in Section 3.2. Finally, the chapter concludes with a brief comparison of the European and U.S. markets.

3.1. Description of the mobile phone market

A mobile phone market consists of several strongly interlinked entities. Even though the prevalence and significance of each party varies in each market (European, U.S. etc.),

there yet exists a fairly consistent set of actors. This so called mobile phone value system is illustrated in Figure 9.

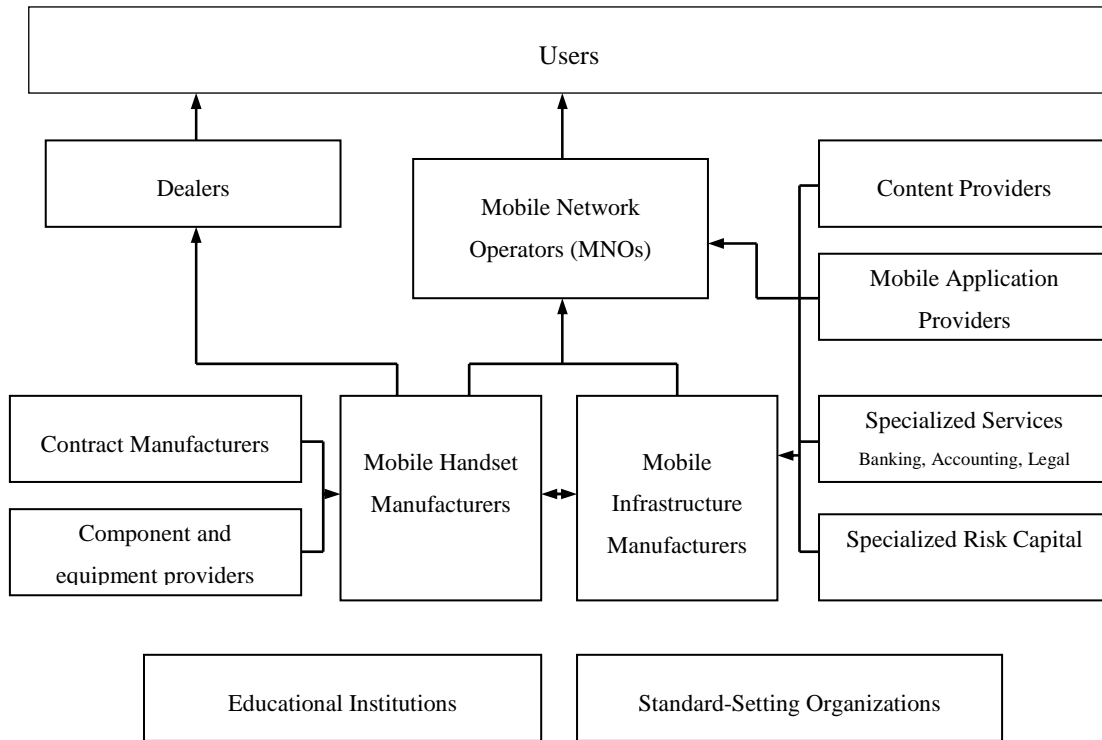


Figure 9. The Mobile Phone Value System (adapted from Porter & Solvell, 2002)

Generally, a mobile handset manufacturer operates in close cooperation with several network parties. In the manufacturing stage, the handset manufacturer requires inputs from *component and equipment providers* (e.g. Perlos) should the manufacturer take charge of the manufacturing process itself. Apple, for instance, orders its displays from LG and processors from Samsung (Appleinsider, 2010) while Samsung produces most components for its handsets in-house. However, the production may also be partly or completely outsourced to a *contract manufacturer* such as Elcoteq or Flextronics. On the other hand, a manufacturer such as Nokia needs to actively cooperate with *mobile infrastructure manufacturers* (e.g. Ericsson, Nokia Siemens Networks) and *Mobile (network) operators* such as Teliasonera to guarantee their support and facilitate sales through the mobile operator in addition to the apparent sales channel established by *dealers* like Gigantti. In addition, there exist great many suppliers of content and

applications as well as financing and advisory services that are crucial for the handset manufacturer.

In addition to the above mentioned and rather evident actors, it should be noted that in the mobile industry the role of *standard-setting organizations* such as 3rd Generation Partnership Project (3GPP) and International Telecommunications Union (ITU) is of great importance. This is due to the fact that standards are co-developed among industry leaders (Nokia, NSN, Ericsson, Huawei, Motorola etc.) and the companies that manage to include their Intellectual Property Rights (IPRs) into the final standards such as 3GPP Release 99 (i.e. the base case standard for 3G devices and networks) have a significant advantage over other manufacturers due to license payments (e.g. the dispute between Nokia and Qualcomm over IPRs, see Hughlett, 2006). The importance of essential patents and the relative contributions of the participating companies have been discussed by He et al. (2006).

3.2 Five forces analysis

Since the European and the U.S. markets present a great number of similarities, the five forces analysis will be carried out jointly for both markets with additional remarks related to each individual market. Drawing upon Industrial Organization (IO) economics, the five forces framework is used to evaluate the competitive conditions and the resulting attractiveness of a given industry. For a more detailed description of the method refer to Section 2.3.

Buyer power

In the mobile phone market, the buyer power dimension consists of components such as buyer size, buyer switching costs vs. firm switching costs, availability of existing substitute products, dependency on existing distribution channels etc. From the viewpoint of a handset manufacturer, there are several buyer types e.g. consumers, retailers, mobile operators and businesses. While in Europe the end consumers can be

reached directly and via different middlemen, in the United States the operators handle around 90 % of end sales and thereby control the distribution. (Rauhala, 2010; Steinbock, 2010) Thus, the U.S. buyers (i.e. operators) generally have far greater power than their European counterparts. Still, the consumers' brand and product preferences obviously greatly affect what mobile operators choose to offer and thereby also exercise power over mobile operators.

The power possessed by different buyer groups also comes from different sources. In addition to consumers' capability to influence mobile operators, their power also stems from their facility and tendency to switch the brand whenever they see necessary while the operators are generally tied to longer-term contractual obligations towards the manufacturers. The distributors and retailers, depending on their size, then represent a middle case where they have some contractual obligations and generally buy substantial volumes.

Supplier power

The supplier power stems from supplier switching costs, degree of input adaption, strength of the distribution channel, scarcity of suitable suppliers, ability of suppliers to vertically integrate, importance of quality/cost etc. In the mobile phone industry, with respect to other actors, suppliers generally possess mediocre market power (see e.g. Datamonitor, 2010a; Datamonitor, 2010b) although in some cases companies such as Nokia have been accused of dominating their suppliers who have had no choice but to obey and adapt (Alkio & Lilius, 2009). This dominance results, among other things, from the handset manufacturers' agility in tendering and switching suppliers. However, it should be noted that the emergence of large MNCs such as Samsung as suppliers and the increasing complexity of the supplied components serve to increase supplier power.

In Europe and the United States there does not seem to be any obvious difference while the supplying is global and, especially, not focused neither in the United States nor Europe. Finally, one should note that the dependence of a company on each of its suppliers varies to a great extent. For instance, if a mobile phone manufacturer designs

its hardware to match the operating system supplied by a specific supplier (say HTC for Google Android), switching the supplier would constitute a significant cost and might lead to supplier's dominance.

New entrants

The situation in the mobile phone industry with respect to 'new entrants' is currently two-fold. On one hand, mobile phones have reached such complexity that any company planning on entering should generally have vast financial, technological and marketing resources. On the other hand, the homogenization of hardware especially in the low-end and the increasing software focus allow an easier entry for companies traditionally strong in software R&D such as Google. Nevertheless, the capital intensity of the industry still constitutes a significant barrier of entry and the dimension ranks average both in Europe and the United States (see e.g. Datamonitor, 2010a; Datamonitor, 2010b).

Recently, the fast economic growth, development and internationalization the economies of certain Asian countries, South Korea, Taiwan and China in particular, have encouraged companies from these markets to enter the European and the U.S. markets in search of further growth. The entry of companies such as HTC (Taiwan) and ZTE (China) has increased competition especially in the low and mid-range (Schwartz, 2009, Medford, 2008). However, this recent increase in the number of actors in the European and the U.S. markets also makes the market less attractive for new entrants in the future.

Degree of rivalry

The degree of rivalry also includes a great number of factors: competitor size, number of players, level of differentiation, low-cost switching, similarity of companies etc. The mobile phone industry is dynamic by nature with short product life cycles and changing consumer tastes. Both in Europe and the United States there are numerous large manufacturers present in the industry and the competition in all categories fierce

(Mustonen, 2010). Even if none of the manufacturers is able to dominate any single market, they have the power to influence prices and their actions affect other actors. During recent years the transformation of the industry towards software focus has also attracted new companies and added to the rivalry (Landler, 2007).

The rivalry originates from different sources in different categories. In the low and mid-range the products are feature-wise fairly similar and numerous, and the competition has a strong price focus. In the high-end some companies, Apple in particular, have managed to differentiate their offering and reap clearly higher than average profits. (Frommer, 2009) In general, the degree of rivalry could be considered to rank highest among the five forces especially now that several Asian companies are entering the market and traditional players are fighting at the cost of profitability over their market shares (Herrala, 2009).

Threat of substitutes

Currently there would appear to be no obvious substitute for mobile phones in people's everyday lives. Rather, it seems that mobile phones are absorbing many of the functions of the other electronic devices such as camera, calculator, MP3 player etc. The closest substitutes would traditionally be fixed line telephony which obviously lacks mobility to really be considered substitute and a laptop computer, which can be considered more of a complementary product (also finds support in the secondary data on the US market in Chapter 5). However, it should be noted that many of the manufacturers of complementary products may actually notice an opportunity to become mobile phone producers mostly utilizing their existing knowledge and expertise in electronics (take LG and Samsung for example). Thus, in the case of mobile phone industry, threat of substitutes would not constitute a major factor in the five forces framework (see also Datamonitor, 2010a; Datamonitor, 2010b).

3.3. Europe

According to Datamonitor (2010a) mobile phones industry profile the European mobile phone market shrank by 2,6 % to a value of \$25,7 billion in 2009. In the same year, the total unit sales reached a volume of 260,8 million units corresponding to a per-unit price of \$95,6. The historical value and growth of the market is illustrated in Figure 10.

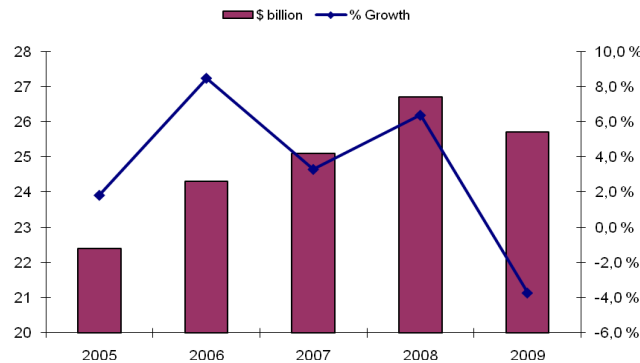


Figure 10. European Mobile Phone Market Value (adapted from Datamonitor, 2010a:10)

Looking at the distribution of the market value in Europe (Figure 11) it can be seen that the three largest countries by mobile phones sales volume account for around 53 percent of the total market value. The five biggest, Germany, France, Italy, United Kingdom and Spain already total approximately 73 percent. Thus, the European mobile phone market is strongly driven by a few developed and populous countries while the contribution of most European countries (50 in total) is fairly small.

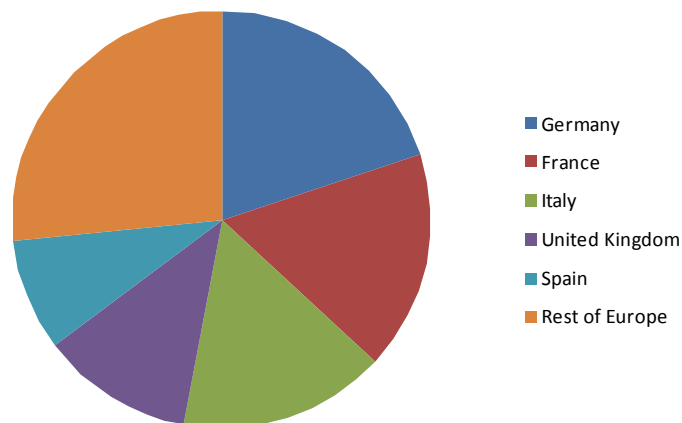


Figure 11. Market volume by country in Europe (Datamonitor 2010a:12)

Nevertheless, one should note that the purchasing power varies notably across Europe and influences the prices of phones bought in each country. The three biggest countries by sales constitute 28,4 % and the five biggest 43,4 % of the population of Europe. Comparing these population figures to the respective shares of market volume it is evident that people in these five high GDP countries, where GPD (PPP) in 2010 ranges from \$29 400 (Spain) to \$35 700 (Germany), spend more on average on mobile phones than in the rest of Europe which accounts for 56,6 % of the total population but only 26,8 % of market volume. (CIA 2011, IMF 2011)

While the market value in dollars gives us relevant information of the growth or decline of a market, it does not reveal the composition of this value. In order to gain insight into the type and category of handsets that consumers buy each given year, it is useful to look at the average selling price of a mobile phone. The number of units sold each year and the average unit price are given in Figure 12.

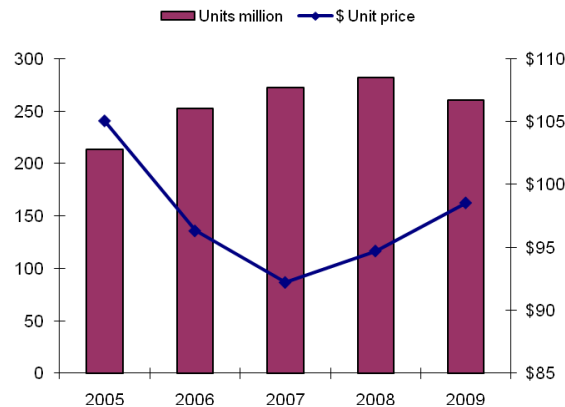


Figure 12. Number of units sold (millions) and unit price (\$) in Europe (Datamonitor, 2010a:11)

As evident from Figure 12, despite the growth in the number of units sold (210 million to 260 million over 5 years) the total sales volume has not risen correspondingly due to a decline in the average price of a unit during 2005-2007. This can be interpreted in several ways. First, increasing price competition might have forced vendors to reduce their retail prices in order to retain market share. This claim finds support in an article published in the Finnish magazine *Tietoviikko* (2010) stating that the average price of a Nokia mobile phone went down from 64 euros to 61 euros from Q2/2009 to Q2/2010 and that of smart phones from 181 to 143 euros. Similarly, South Korean LG saw a decline of 27,8 % in the average selling price (ASP) during the same period. (Lenninghan, 2010)

Another reason that may explain the evident reduction in the average cell phone prices is the increasing sales in developing countries, mostly in Asia and Africa. These handsets mostly represent the low-end of manufacturers' product assortment and thereby lower the average price. Thirdly, mid priced handsets are starting to offer many of the functionalities traditionally available in high-end devices and can therefore meet the demands of the average consumer. However, this trend reversed in 2007-2008 and since then the sales volume has seen a small decline but the average price has gone up by close to 10 per cent.

Market shares

The development of market shares of individual companies in the European market has been presented in Figure 13. Despite the heated debate over and discussion on the performance of individual companies (especially Nokia and Apple) over the last few years, the changes in their relative positions have not been very dramatic. Perhaps the clearest individual trend has been the rise of Samsung to clearly occupy the 2nd position on the market still about 8 percentage units behind Nokia. The following four biggest handset manufacturers all account for individual market shares of 5-10 %, i.e. already trailing around 20 percentage units behind Samsung and 25-30 percentage units behind Nokia.

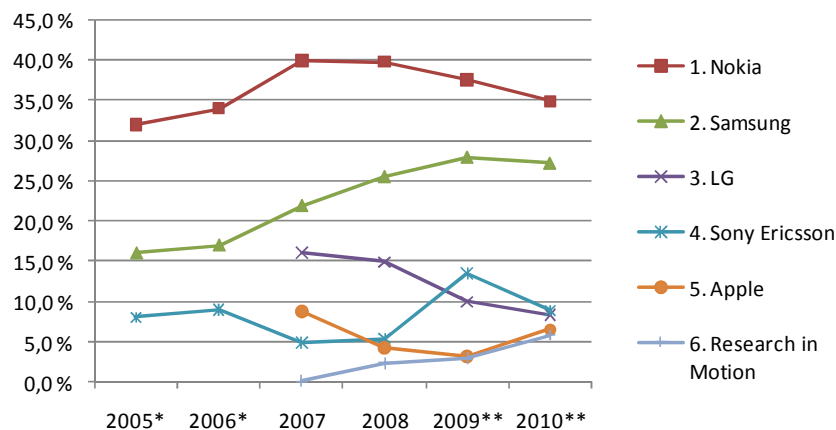


Figure 13. Handset manufacturer market shares 2005-2010 in European market.

* Based on Q1 sales. ** Based on Q1+Q2 sales. (IDC 2006, 2008, 2010)

There is, however, a reason why the debate especially over the so called flagship models and their relative competitiveness could be justified. A well accepted argument has been presented that many of the customers on the market base their purchasing decisions on how advanced they consider the manufacturer to be even if their intention is not to acquire the flagship model (or even a smart phone). Some might argue, that the relative decline of Nokia from 2007 to 2010 could be explained by the absence of a comparable flagship model to that of Apple (i.e. iPhone) even though the flagship model itself contributes a fairly small portion of the total sales. For example, Nokia's flagship model

N8 was estimated to account for around 3,2 % of Nokia's total sales in Q4/2010 (Nokia, 2010d; Rautanen, 2010).

What follows, is an analysis of the development of the sales and market share of Nokia during the period of 2005-2009. Prior to 2005 Nokia's sales in Europe were included in a compound figure consisting of Europe, Middle East and Africa and are therefore not comparable. The whole statistics of Nokia's sales as reported by the company are given in the 20-F filing. Notice that the market shares of Nokia in Figure 13 and Figure 14 and not fully comparable as Figure 14 uses year end values while Figure 13 bases on a combination of Q1, Q1/Q2 and full year average market shares. In addition, Figure 13 utilizes IDC estimates while Figure 14 those given by Nokia. This decision is justified by the intention to maintain comparability within a graph (between companies in Figure 13 and Europe-global in Figure 14) and the lack of availability of full year data for all the companies.

In Figure 14, we notice that during the period of 2005 – 2009 Nokia has been able to steadily increase its market share in Europe from around 37 % to 42 % excluding a small temporary notch in 2006. Globally, the company has maintained its market share in the range of 34 – 36 % during the 5 year period. The most recent reports about the development during 2010, however, indicate that there is likely to be a drop in both the global and the European market share whereas the average price of Nokia phones has risen from 61 Euros to 65 Euros. (Nokia, 2010a)

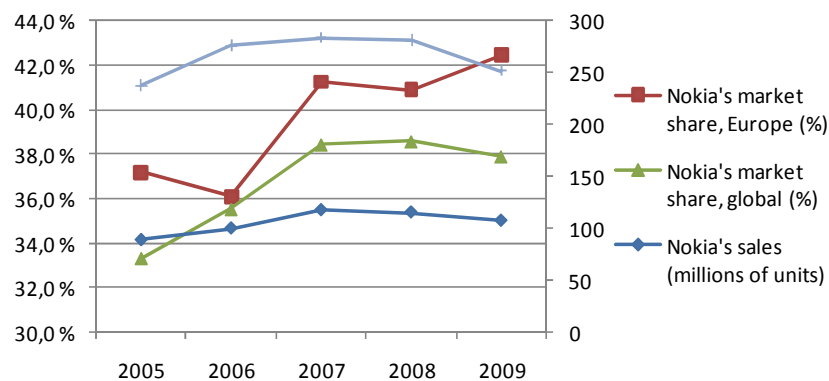


Figure 14. Nokia's sales and market share in Europe 2005 – 2009(Nokia 2007, 2009, 2010c)

3.4. United States

This section on the U.S. mobile phone industry will follow a similar structure to that presented for Europe in Section 3.3 to allow for a comparison of the two in Section 3.5.

The U.S. mobile phone market inclined by 5,6 % to a value of \$10,4 billion in 2009. In the same year, the total unit sales were 125 million units corresponding to a per-unit price of \$83,2. (Datamonitor, 2010b) The historical value and growth of the market is illustrated in Figure 15.

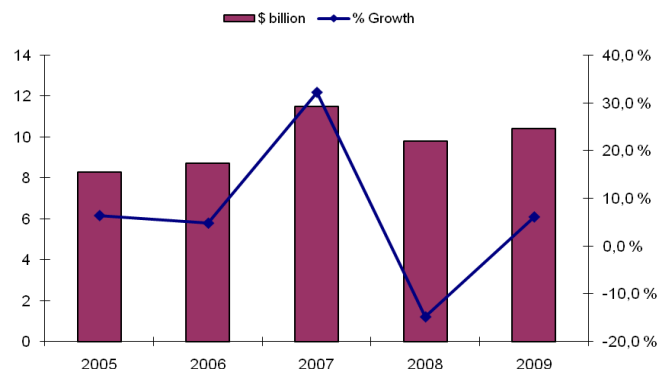


Figure 15. United States Mobile Phone Market Value (Datamonitor, 2010b:10)

Similarly as in the case of the European market, let us now look at the historical development of the average handset price in the United States (Figure 16). Despite being a single numerical value (instead of an extensive data set), the average price gives us relevant information not only about the categories of phones that consumers buy (low end, smart phones etc.) but also about the business environment and the resulting competition in a given market. For instance, in Tanzania 80 % of the population interviewed for a study reported having bought a cell phone in the range of \$40 – \$80 while very rarely exceeding \$150. (Mpogole et al 2007) This figure clearly indicates that the competition takes place in the low-end instead of smart phones where high-end manufacturers such as Apple are absent.

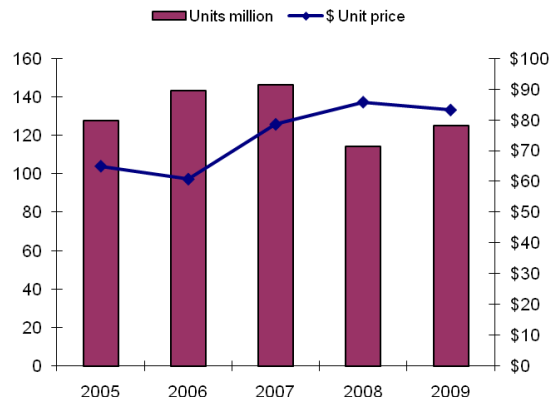


Figure 16. Number of units sold and unit price in the United States (Datamonitor, 2010b:11)

In the U.S. market, years 2004 to 2006 showed a clear decline in the number of units sold whereas the average price of a phone climbed steadily with the introduction of several series of smart phones. In 2007, the incline in the unit prices halted and turned into a sharp decline reaching a level of \$114 in 2008. This sharp decline in the unit price was not even offset by a corresponding increase in the unit sales as the total market value dropped from \$11.5 in 2007 to \$9.8 billion in 2008.

The development of the US mobile phone market value could be explained by various factors. Firstly, the increasing competition especially from the South Korean manufacturers Samsung and LG forced price cuts also among the traditional players (see market share development Figure 17). Second, the still on-going financial crisis escalated during 2007. The atmosphere created by a deepening distress in the financial markets spreading to the society caused both consumers and companies to reduce and postpone their spending, mobile handsets included. (Medford, 2008) Finally, as in the case of Europe, the development of mid-priced handsets to include functionalities earlier available only in the high-end has moved demand toward the low-end.

Market shares

In this section, the current competitive situation of the handset manufacturers is discussed. Due to the fact that mobile operators possess significant power on the U.S. market, a brief overview of the current composition is provided. Finally, the section

concludes with a discussion on Nokia's recent historical performance in the United States.

As seen in Figure 17, the current North American mobile phone market composition differs significantly from that of Europe. Looking at sales volume of all mobile handset (as opposed to only smart phones, see Figure 18), there are three major players Motorola, LG and Samsung that together account for about 70 percent of total sales. On this market the global leader Nokia only ranks fourth having with its 7 % market share having been bypassed by the Blackberry manufacturer Research In Motion (RIM) during 2010.

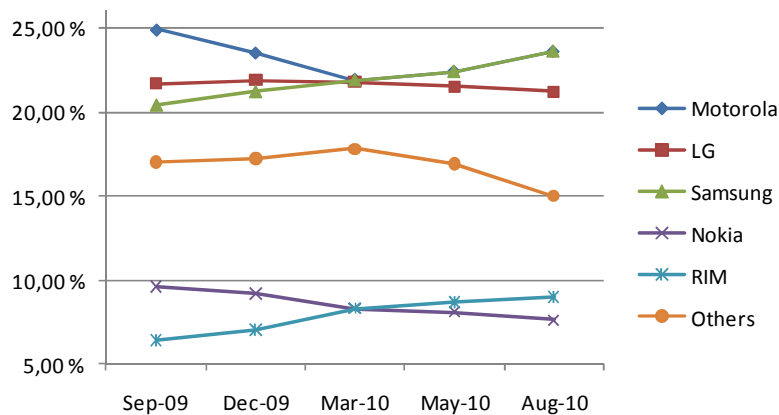


Figure 17. U.S. market shares 2009-2010 (Comscore 2009, 2010), 3 month averages (end date)

If we look at the smart phone sales during 2009-2010 on the U.S. market the situation is very different (see Figure 18). Now, Research In Motion has a clear lead (37,6 % vs. 24,2 %) to its closest competitor Apple but it has lost 5,0 percent of its market share in the course of a single year. Apple has retained its 25 percent share, the most important development being the extremely fast rise of Google (Android platform) from 2,5 % to 19,6 % in one year. (Comscore, 2009; Comscore, 2010) Additionally, more recent research indicates that during Q2 2010, Android had already taken the lead in new shipments the corresponding shares being: Android 33 %, RIM 28 %, and Apple 22 % (NPD, 2010).

The rest of the manufacturers have lost market share fast. Still, in September 2009 Microsoft had an almost 20 % share of smart phone sales but has since declined rapidly to its current 10 percent point. Similarly, Palm has gone from 8 % to 5 % mostly against Android. Finally, category Others includes several manufacturers such as Nokia that have been unable to gain significant market share for a variety of reasons including the structure of the market (different sales channels, operator power, strong domestic brands etc.).

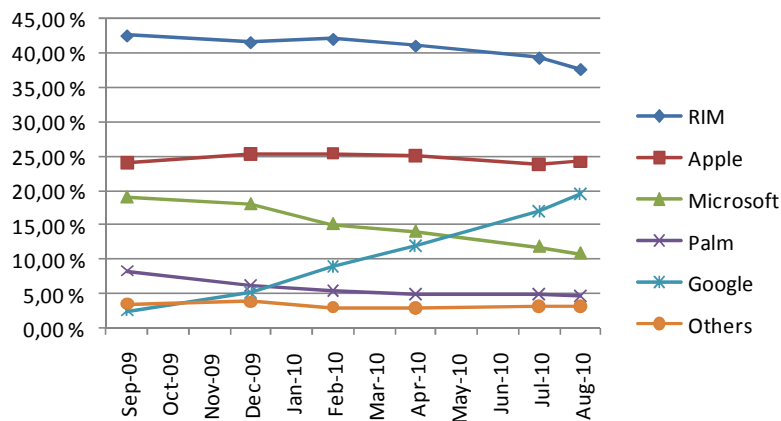


Figure 18. Smart phone sales in US (Comscore 2009, 2010), 3 month averages (end date)

Now, looking at the performance of Nokia in the United States since 2005 (Figure 19), we notice that Nokia has not always been in the category “Others”. In 2005 Nokia still had 18 percent of the U.S. market. (Nokia, 2007a) Looking further back, in 2002 Nokia had 35 percent of the market (Helsingin Sanomat, 2008). The decline from 35 % to around 7 % has been drastic and has taken place despite the management’s well known remark “not to rest before the United States has been reconquered” (see e.g. Tietokone, 2009).

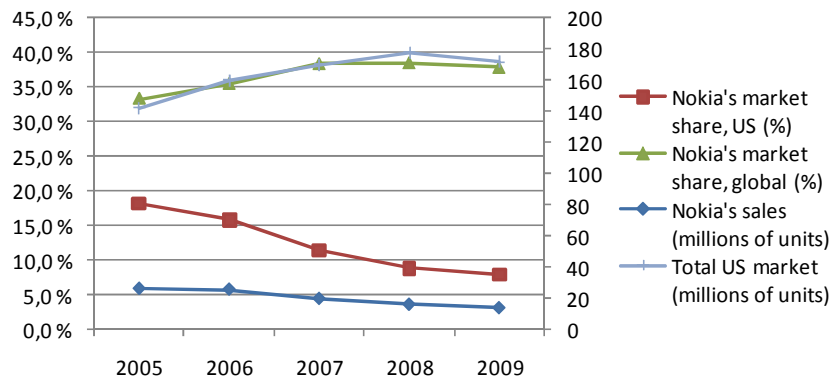


Figure 19. Nokia's sales and market share in North America 2005-2009 (Nokia 2007, 2009, 2010c)

Nokia's problems in the U.S. mobile phone market thus trace back to the beginning the last decade, i.e. to the years 2001-2003. The history of Nokia's limited success and the reasons extracted from the case analysis will be discussed in more detail in Chapter 5 and especially in Section 5.1.

Finally, let us look at the composition of the U.S. market in the light of mobile operators and how Nokia is represented in their offering. As seen in Figure 20 there are currently two mobile operators, Verizon and AT&T, that together account for about 57 percent of the U.S. customer base. Sprint and T-Mobile follow straight after having a combined market share of 25 percent. Additionally, there is a Tracfone with a 5 percent share and other smaller operators having a combined 14 %.

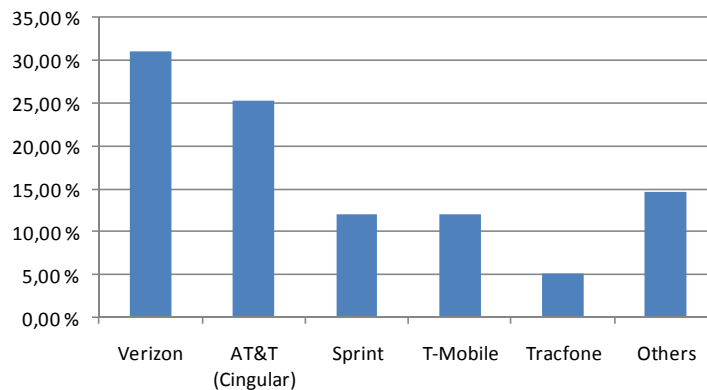


Figure 20. Operators' market shares, March 2010 (Comscore, 2010)

To have an idea of how well Nokia is represented in the consumer marketing of the 4 largest US operators, their current (25th October 2010) websites were reviewed and the following data was gathered:

- Total number of smart phones in offering
- Total number of feature and multimedia phones in offering
- Total number of Nokia phones in offering
- Total number of Nokia feature and multimedia phones in offering
- The brands in offering
- Nokia's models in offering

The results are summarized in Table 3.

Table 3. Nokia on US operators Internet sites (Verizon, 2010; AT&T, 2010; Sprint, 2010; T-Mobile 2010)

| | Smart phones | Feature and multimedia phones | Nokia smart phones | Nokia feature and multi-media phones | Brands in offering | Nokia's models in offering |
|----------|--------------|-------------------------------|--------------------|--------------------------------------|---|-----------------------------|
| Verizon | 27 | 27 | 0 | 1 | HTC, Palm, LG, RIM, Motorola, Samsung, Android, Casio, Verizon | 7705 Twist |
| AT&T | 28 | 80 | 0 | 3 | Apple, Palm, Samsung, Motorola, HTC, HP, RIM, Sony Ericsson, Pantech, LG, Sharp | 2330, 2720, 6350 |
| Sprint | 18 | 22 | 0 | 0 | HTC, Samsung, Palm, LG, Sanyo, Blackberry, Motorola | - |
| T-Mobile | 26 | 22 | 1 | 4 | Samsung, Motorola, Sony Ericsson, LG | 2330, 2720, 5130, 5230, E73 |

Looking at Table 3 it is evident that Nokia has not been able to capture the potential of the operators as a sales channel. One out the four biggest operators (Sprint) does not represent any of the Nokia's 26 models currently available on its US website and only

one (T-Mobile) has a smart phone (E73) on its listing. Moreover, in total the operators only offer 6 different Nokia models.

3.5. Europe and the United States – similarities and differences

This chapter started with an overview of the mobile phone market (Section 3.1) and continued with a five forces analysis of the same in Section 3.2. Sections 3.3 and 3.4 discussed the essential characteristics of the European and the U.S. markets, respectively. In this final section, a brief comparison of the two markets will be provided having as an objective to highlight the most prevalent similarities and differences.

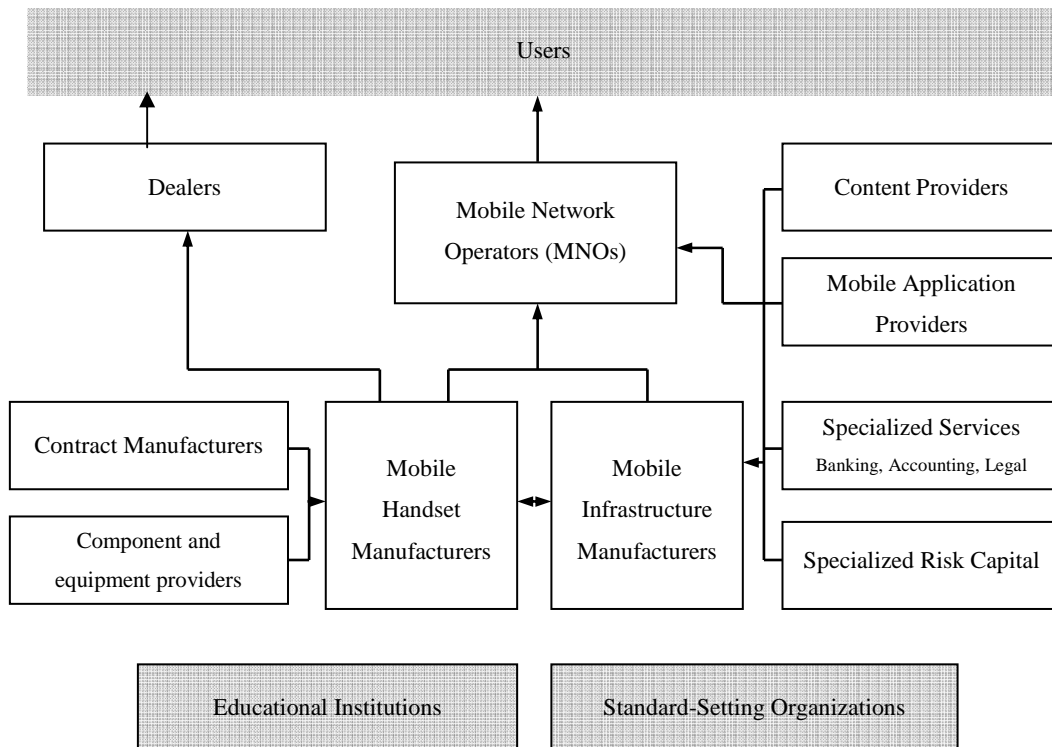


Figure 21. The Mobile Phone Value System (adapted from Porter & Solvell, 2002)

Firstly, both the U.S. and European markets are developed and the consumers, in general, have fairly high purchasing power. Obviously, in both markets significant

regional differences exist. In Europe, there are countries such as Norway and Switzerland whose nominal gross domestic products (GPD) are in the order of \$70 - 80 000, whereas some Eastern European countries e.g. Romania are still below \$10000. (World Bank, 2009) In North America, at least statistically, residents in all states possess significant purchasing power as the per capita nominal GPD ranges from around \$25 000 of Mississippi to \$51 000 of District of Columbia. (US Department of Commerce, 2010) However, the prevailing high levels of income inequality in the US make the market highly fragmented. Moreover, the fact Europe consists of 50 different countries some still being outside of the European Union increases the fragmentation of the market.

In light of the composition of the market (see Figure 21), the European and U.S. markets present mostly similar but also fairly distinct characteristics. Despite the fact that all the actors (MNOs, vendors, dealers, standardization bodies etc.) are present on both markets, their roles are significantly different. From the mobile handset manufacturer's point of view, there exists a critical difference: the market power of mobile (network) operators. While in Europe mobile handset manufacturers sell and market their products through various channels (direct, vendor, mobile operator etc.), in the United States the operators and their licensed distributors are the only major channel. This calls for different operation modes as the handset producers are practically forced to cooperate with the operators. The difference becomes evident when looking at Nokia's sales volume via different distribution channels in each continent (Figure 22).

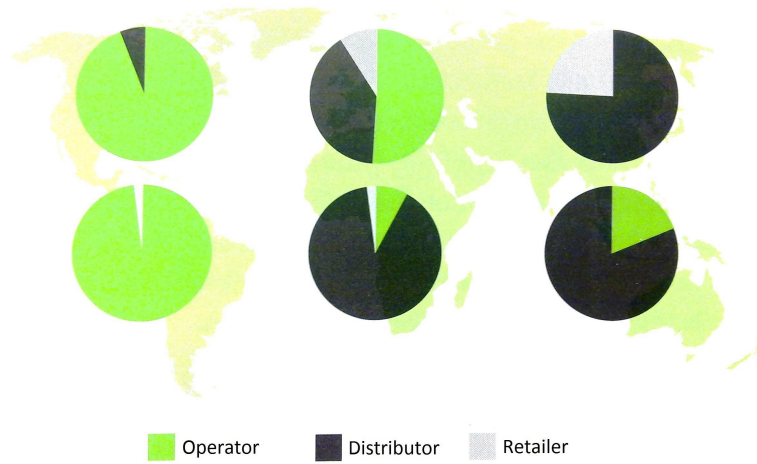


Figure 22. Nokia's distribution channels in 2006 (adapted from Hyöty, 2011:150)

Finally, the differences in distribution channels and relative power of actors also greatly influence the aptitude of a strategy for a given market. While in Europe and most other continents handset manufacturers with strong brands sell through operators, distributors and retailers under their own brand, in the United States only the ones who have collaborated with operators have succeeded in reaching high market shares.

4. Methodology

In this chapter, the methodology applied in the empirical part of the thesis is presented. In Section 4.1 the fundamental elements of case study research will be explained followed by a discussion on the critical realism approach in Section 4.1.1. In Section 4.2 the case study setting is described together with reasoning for the selection of this very case. The methodological choices related to data collection and data analysis are presented in Sections 3.3 and 3.4, respectively. Finally, validity and reliability of the chosen methodology are evaluated in Section 3.4.

4.1. Case study research

Case study as a social sciences research approach has significantly gained in popularity during the last couple of decades. Compared to other possible ways of conducting research in this field, such as surveys, histories, experiments, and epidemiologic research, case study offers significant advantages but also presents a significant number of unique challenges and disadvantages. Generally, case study can be considered appropriate and preferred when the researcher finds himself (or herself) asking “how” and “why” questions, has little control over events, and focuses on a contemporary phenomenon. (Yin, 2009) To cope with the inherent challenges related to the complexity of real-life and the vast amount of variables and data points available, several approaches have been proposed, e.g. process of inducting theory (Eisenhardt, 1989) and triangulation (see e.g. Denzin, 1970).

The case study research method can be defined as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident”. (Yin, 2003:13) However, case studies can furthermore be categorized using a number of criteria. Firstly, a distinction can be made between single-case and multiple-case designs depending on the number of individual cases to be analyzed. Second, research

designs can be further divided into holistic (single unit of analysis) and embedded (multiple units of analysis). (Yin, 2009) Third, case studies may approach reality as something apprehensive to be discovered systematically (positivism) or as a social construct (interpretivism). Finally, case studies may be both qualitative and quantitative in nature.

Since case studies entail such a wide range of methodological choices, many researchers suggest that case studies should be considered more of a research strategy that encompasses several methods than a method itself. While not following a strict set of methodological rules, case study allows for great flexibility and more in-depth analysis of the unfolding phenomena.

The case study presented in this thesis follows a holistic single-case design utilizing both quantitative and qualitative data sources for greater validity and reliability. Furthermore, the research problem is approached from a critical realism perspective thereby not conceptually falling under neither positivism nor interpretivism. The case study itself is supported by analysis of the European and U.S. markets presented in Chapter 3.

A chronological presentation of the case study and its link to preceding and subsequent parts of the thesis are illustrated in Figure 23.

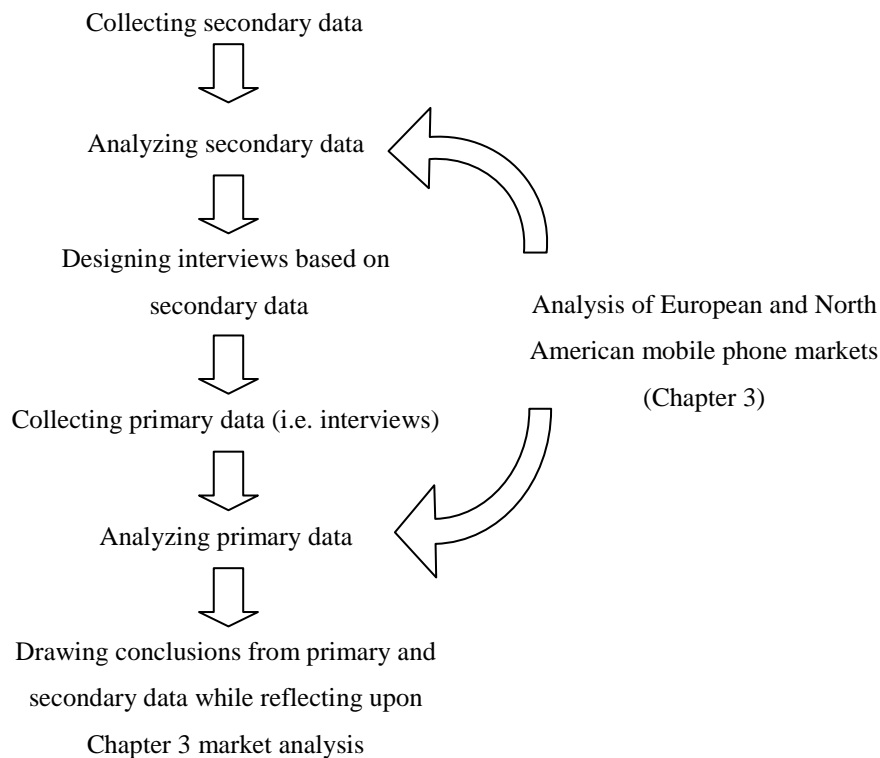


Figure 23. Case study procedure

Critical realism in case study research

Traditionally, case study researchers have adopted either a positivistic or an interpretistic approach in their research. Those researchers who take a positivist position are often inclined to theory building through the use of multiple-case studies and put significant focus on internal and external validity, construct validity and reliability. (Yin, 2009) By these and other means, positivists seek to enhance the reliability and credibility of their studies. On the other hand, interpretists deny the possibility of knowing what is real and claim that the information is always distorted by the observer's own values, feelings etc. allowing only for an interpretation of the surrounding reality. (Healy & Perry, 2000)

To serve as a middle ground between positivism and interpretivism, critical realism has emerged. Critical realists argue that there is a real world to be discovered although

being only imperfectly and probabilistically apprehensible. Like positivists, the supporters of critical realism look for ways to improve the reliability of the research by relying on multiple perceptions of participants and triangulating over multiple data sources. In this context, each participant's perception is considered as a window into this existing reality. While interpretists might be interested in studying how the participant views the world, the window is considered a means to advance their understanding of the objective world. (Healy & Perry, 2000)

The study of Nokia in the United States is approached from the viewpoint of critical realism for several reasons. Firstly, Nokia represents an interesting, somewhat exceptional, but still a single case and, as such, does not serve as a basis for theory development often sought after by positivists. (see e.g. Eisenhardt, 1989) On the other hand, one of the fundamental goals of this thesis is the better understand the reasons for Nokia's relatively modest performance in that very market. Therefore, belief in the existence of a real world and reliable information is imperative.

4.2. Case study setting

The U.S. mobile phone market was chosen as the case context for multiple reasons. First, the United States represents a market where Nokia has been fairly unsuccessful as opposed to most other world markets. Second, the structure and the power relations of the players in the United States are very different to those of e.g. the European market. Finally, gathering data of the U.S. market is fairly straightforward as it is well documented and closely observed in most parts of the world.

As recently as 2002, Nokia held a market share of 35 % in the United States, but this quickly eroded down to around 7 % in 2009. (O'Brian, 2009) However, the explanations given for the sharp decline and Nokia's unsatisfactory performance in general, are mixed. In this work, the data from several public sources ranging from company reports and market data to newspapers and market analyses will be combined with selected interviews with key experts to shed light on the explanatory factors for

these phenomena. This empirical part of the study is preceded by a study of the European and U.S. mobile phone markets (see Chapter 3) that provides the basis for understanding the fundamental differences of different markets.

Despite its longitudinal nature, the study does not seek to describe Nokia's actions nor the U.S. market in chronological detail. Rather, the study covers a meaningful time period that allows a collection of a sufficient volume of secondary data so that both permanent and passing phenomena related to Nokia's situation can be identified. Thus, this thesis will only consider the period ranging from year 2002 when Nokia was still thriving in the United States until 2011 when the primary and secondary data collection was completed.

Nokia Corporation – an overview

Nokia is a Finnish multinational telecommunications company headquartered in Keilaniemi, Espoo. In 2010, Nokia employed around 132 000 people (including NAVTEQ and Nokia Siemens Networks), reported net sales of EUR 42.4 billion from a total of more than 160 countries, had production in 9 and R&D presence in 16 countries. In 2010, Nokia remained the global market leader with a market share of 32 % down from 34 % in 2009. (Nokia, 2011c)

The history of Nokia dates back to 1865 when Fredrik Idestam found the first wood pulp mill on the banks of the Tammerkoski rapids. Shortly thereafter, he found another mill by the Nokianvirta river (in the city of Nokia) that gave the company its name. Few decades later in 1898 the company moved to rubber business (founding of Finnish Rubber Works) and in 1912 expanded to cable business (founding of Finnish Cable Works). In 1960, the company again established its first electronics department followed by a merger of Nokia Ab, Finnish Cable Works and Finnish Rubber Works into Nokia Corporation. (Nokia, 2011d)

Nokia's story as a manufacturer of mobile phones began in 1979 when Nokia and Salora introduced Mobira Ltd as their joint venture focusing on the development of NMT (Nordisk Mobiltelefon) phones. The first Mobira NMT phone was launched in 1982. During the 1980s Nokia was still highly diversified producing televisions, computers, chemicals, military equipment etc. In 1992, Jorma Ollila became the CEO of Nokia and focused the company on telecommunications winding up non-core activities in a rapid fashion. (Nokia, 2011c) Within a few years of the election of Ollila, Nokia managed to reach dominance in the globalizing mobile phone market and has retained that position until current day. However, during the most recent years Nokia has faced intensifying competition and reports of internal and managerial problems have eroded the value of the company. (see Chapter 5) In February 2011, the current CEO Stephen Elop announced the historical joint venture with Microsoft focusing on the development of a new mobile phone ecosystem based on the Windows Phone 7 operating system. (YLE, 2011)

In the course of its history, Nokia has gone through several large organizational changes. In the last couple of years, the changes in the business environment and the acquisition of the navigation services provider NAVTEQ and the joint venture with Siemens have necessitated further changes in the organization. The current (April 2011) structure of Nokia has been presented in Figure 24 and the organizational charts of 2006 and 2008 in Figure 25.

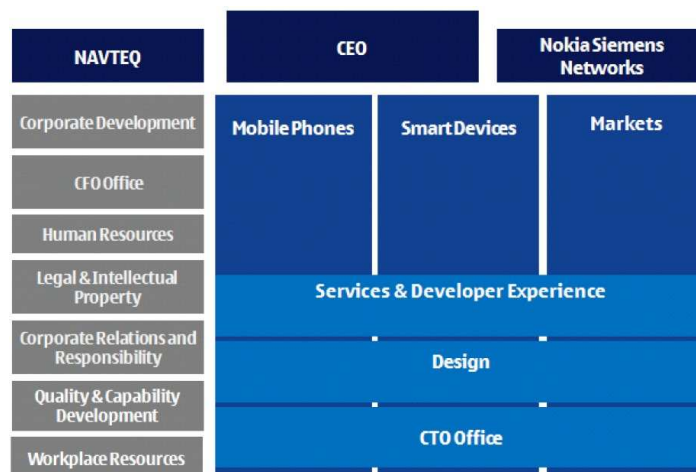


Figure 24. Nokia as of April 1, 2011 (Nokia, 2011)

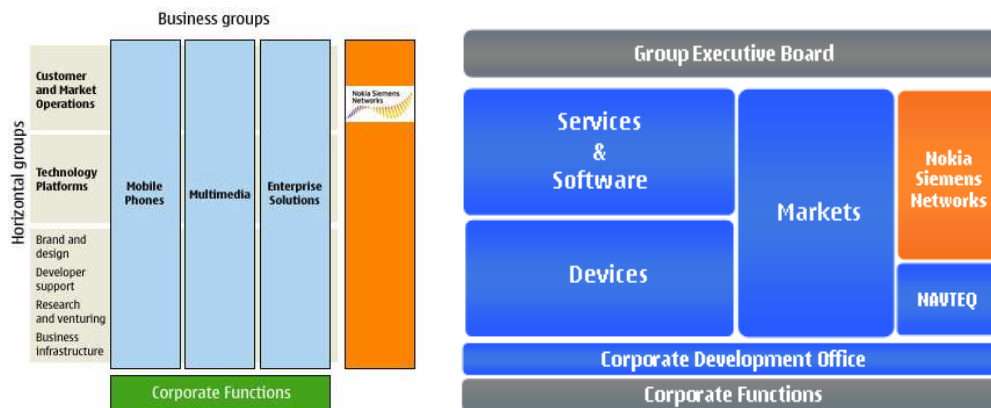


Figure 25. Nokia in 2006 (left) and 2008 (right) (Nokia, 2008; Nokia, 2007)

Currently, Nokia entails three business groups Mobile Phones, Smart Devices and Markets. While the Mobile Phones unit focuses on lower price segments, the Smart Phones unit is in charge of Nokia's smart phone development and the research on future devices and platforms to support long-term profitability. Finally, the Markets business unit is responsible e.g. for the company's supply chains, sales channels and marketing and branding functions. It should be noted that a significant part (revenue 2010 EUR 12.7 billion) of Nokia's business is in network infrastructure under Nokia Siemens Networks although excluded from this thesis.

4.3. Data collection

The data collection methods used to analyze the performance of Nokia in the U.S. context include interviews for primary data and public sources such as company reports and news for secondary data. Gathering of data is preceded by the analysis of the U.S. and European mobile phone markets presented in Chapter 3. The data collection for the case study is designed in a way that the most common explanations for Nokia's unsatisfactory and deteriorating performance are charted through triangulation of several secondary data sources. These data are supplemented by selected interviews with key experts in the field.

Interviews

The collected secondary data served as a basis for planning the content of the interviews and also the selection of the individuals to be interviewed. The interviews were primarily carried out in order to gain additional insight into the findings of secondary data and are therefore limited in number. The two persons interviewed were selected to represent different viewpoints (academia vs. business) to the studied phenomenon. A general description of the interviewees is presented in Table 4.

Table 4. Description of the interviewees

| Interviewee | Position | Organization |
|--------------------|-------------------------------------|---------------------------|
| Hannu Rauhala | Senior Analyst (Telecommunications) | Pohjola Bank, Finland |
| Heikki Hämmäinen | Professor (Networking Business) | Aalto University, Finland |

Secondary data

The secondary data collected for the case study consists of selected company reports, market and company analysis, news and magazine articles and books. The individual data sources among these are selected on the basis that they represent both material provided by the companies themselves and parties that can be considered unbiased. Furthermore, the secondary sources are selected so as to represent the views of different geographical locations (Finnish, other European, North American etc.) that may be inclined to a location-based bias. In addition to the geographical scatter, the sources are selected such to cover the period of 2002-2011 revealing the most common explanations at each time.

An example of the secondary data sources is given in Table 5. A full list of all the data gathered for the study is given in Appendices I-III.

Table 5. List of secondary data sources (example)

| Nr | Type | Date | Source | Title | Why Nokia is/is not successful in the US? | What will/did Nokia do? | Whose opinion? |
|-----|--------------|----------|----------------|--|---|-------------------------|---|
| 1 | News article | 15.3.02 | ClickZ | Mobile Phone Sales Suffer First Negative Year | CDMA the dominant technology | - | Gartner Dataquest analysts |
| 2 | News article | 17.10.02 | Dagens nyheter | Nokia försöker skrämma kunderna | Nokia stronger in US since major operators have switched to GSM | - | Jorma Ollila, CEO |
| 3 | News article | 28.1.03 | Talouselämä | Moto kampeaa Nokiaa | Lack of operator cooperation | - | Thomas Lynch, Motorola CEO |
| | | | | | CDMA technology | - | - - |
| 4 | News article | 11.6.03 | New York Times | Nokia Warns of Lower Sales, Blaming Economy and SARS | Nokia upbeat because of new product introductions | | Olli-Pekka Kallasvuo, Nokia's chief financial officer |
| ... | ... | ... | ... | ... | ... | ... | ... |

During the course of secondary data collection a total of 42 news articles, 4 books, 10 company reports, 2 market analyses and 5 business blogs were reviewed. A more detailed description of the distribution of the secondary data sources over the study period 2000-2011 is given in Table 6. As evident in the table, more focus was put on the recent years to shed further light on the current situation.

Table 6. Distribution of reviewed secondary data sources 2002-2011

| Type | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | TOTAL |
|----------------------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|----------|-----------|
| Nokia annual reports | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 9 |
| Market analyses | | | | | | | | 1 | 1 | | 2 |
| Books | 1 | | | | | | | 1 | 1 | 1 | 4 |
| News articles | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 10 | 6 | 3 | 42 |
| Blogs | | | | | | | | | 5 | | 5 |
| Total | 4 | 3 | 4 | 4 | 5 | 5 | 6 | 13 | 14 | 4 | 62 |

4.4. Data analysis

Since the case study procedure consists of phases where gathering of primary data was preceded by the collection and analysis of secondary data (see Figure 23), the data analysis involved multiple stages. Firstly, the analysis of secondary data consisted of three stages:

- 1) Reading the material
- 2) Extracting explanations
- 3) Categorizing explanations (or finding themes)

In the first stage, the secondary data were read through and the parts of text containing relevant data were clearly marked. In the second stage, the different explanations were extracted into MS Excel. Finally, the explanations were categorized into themes. These themes can be defined as “abstract (and often fuzzy) constructs that investigators identify before, during, and after data collection”. (Ryan & Bernard, 2002) In this case study, themes are the high-level categories of explanations given for Nokia’s performance in the United States such as ‘increased competition’. This procedure included developing a codebook to reduce the data into appropriate categories. (Miles, 1979) This codebook should develop through iteration throughout the study to best represent to most common general themes found in the material. (Ryan & Bernard, 2002)

Based on the analysis of secondary data, the contents of the interviews were drafted. The interviews followed a semi-structured format seeking to gain additional insight into the findings from the secondary data. All interviews were followed by immediate reflection and transcribed during the next couple of days.

Finally, once the data were grouped into appropriate themes, a conceptual model was drafted to illustrate the occurrence of different explanations. This conceptual model was further extended to include the explanations that could be derived from the Chapter 3 analysis of the European and U.S. markets.

4.5. Validity and reliability

Although the case study presented in this thesis does not aim at theory building due to its limited focus on a single company on a single market, validity and reliability are nevertheless of great importance. Four tests have been commonly used to evaluate or establish the quality of empirical social science research (see e.g. Kidder & Judd 1986: 26-29). These attributes include construct validity, internal validity, external validity and reliability. The tactics to be used when dealing with each test and the phase in which each tactic occurs are summarized in Table 7.

Table 7. Case study tactics (Yin 2009)

| Attributes | Case study tactic | Phase of research in which tactic occurs |
|---------------------------|--|---|
| Construct validity | Use multiple sources of evidence | Data collection |
| | Establish chain of evidence | Data collection |
| | Have key informants review draft case study report | Composition |
| Internal validity | Do pattern matching | Data analysis |
| | Do explanation building | Data analysis |
| | Address rival explanations | Data analysis |
| | Use logic models | Data analysis |
| External validity | Use theory in single-case studies | Research design |
| | Use replication logic in multiple-case studies | Research design |
| Reliability | Use case study protocol | Data collection |
| | Develop case study database | Data collection |

Construct validity

To establish construct validity, several tactics were applied in the course of the study. First, the study utilizes several secondary data sources combined with interviews to increase credibility. Moreover, the findings from the primary and secondary data are reflected upon the analyses of European and U.S. markets to further enhance the credibility of the data. Finally, the interviewees were requested to review the case study report.

Internal validity

For this study aiming at explaining the (unsatisfactory) performance of Nokia in the United States the concern for internal validity is critical. As pointed out by Yin (2009), trying to establish a causal relationship where x leads to y can be dangerous if the investigator is not aware or neglects the presence of some third factor z that may have caused or influenced y. Out of the tactics listed in Table 7, this thesis relies mostly on explanation building and addressing rival explanations. Since it is obvious that no one explanation or a well-defined set of explanations exist, the research presented here merely seeks to evaluate the credibility of each given explanation.

External validity

The third test of external validity is perhaps not directly suitable to evaluate this work. Even though single-case studies can be explained by theory, and theories can be tested and contrasted upon single-case studies, the studied phenomenon presents such a large number of unique properties that the existence of a single theoretical framework with explanatory power is highly unlikely. However, the case study still bases on a wider theoretical framework of economic theory especially in the fields of strategy, competition and international business.

Reliability

The objective of the last test 'reliability' is to make sure that if a later investigator followed the same procedures as described by an earlier investigator, the later investigator should arrive at the same findings and conclusions. (Yin, 2009) To achieve reliability, the case study of this thesis not only discusses the data collection and analysis procedures in detail (Chapters 3-5), but also presents the full database of all the secondary material used in the study (Appendices I-III). The full interview data is also available on request.

5. Case study findings

In this chapter, the findings extracted from the analysis of secondary data and interviews are presented. In Section 5.1 the case of Nokia in the United States will be analyzed in light of the secondary data (42 news articles, 10 annual reports, 4 market analyses, 4 books and 5 blogs) and interviews. In Section 5.2 the takeaways from the Section 5.1 analysis will be taken to the industry and market level and serve to complement the market analysis of Section 3.3.

5.1. Nokia's performance in the United States

Secondary data

In the analysis of secondary data, all explanations given in the material were grouped into respective categories. The categories with occurrence $N \geq 3$ are given in Table 8 (for the full table refer to Appendix IV).

Table 8. Themes in secondary data with $N \geq 3$ (* = reference to historical events)

| | Explanation category | 2002 | '03 | '04 | '05 | '06 | '07 | '08 | '09 | '10 | '11 | Total |
|----|--|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 1 | Problems in operator cooperation / operator market power | | 1 | 1 | 1 | | 3 | 1 | 7 | 2 | 1 | 17 |
| 2 | Nokia focused on GSM while CDMA is preferred in the U.S. | 1 | 1 | | 2 | 3 | 1 | 2 | 2 | | | 12 |
| 3 | Symbian related problems | | | | | | | | 3 | 6 | 1 | 10 |
| 4 | Lack of tailored products for operators or U.S. market | | | 1 | | 2 | | 1 | 3 | 3 | | 10 |
| 5 | Intense/intensified competition | | | | | | | 2 | 3 | 1 | | 6 |
| 6 | Delay in offering clamshell phones | | | 3 | 1 | 1 | | | 1* | | | 6 |
| 7 | Phone design does not attract American consumers | | | | 1 | | 1 | | 1 | 1 | | 4 |
| 8 | Too few high-end models available | | | | | | | | 2 | 2 | | 4 |
| 9 | Offering not appealing/innovative | | | | | | 1 | 1 | | 2 | | 4 |
| 10 | Too few models represented by operators | | | | 1 | | 1 | 1 | | | | 3 |
| 11 | Application development environment | | | | | | | | | 2 | 1 | 3 |

As seen in Table 8, the predominant explanation is related to *operator cooperation* which, again, stems from operator market power and their ability to dominate the supply chain. As Gartner analyst Carolina Milanesi puts it:

“The market in the U.S. has always been dominated by the carriers, so they call the shots. And Nokia has had a difficult relationship with the carriers.”
(Schwartz, 2009)

In the book *Winning Across Global Markets* author Steinbock (2010) also states that:

“In the United States Nokia has sought to build its own brand... What makes the U.S. business unique is that it is very much driven by carrier. In other markets, distributors and retailers also play a role.”

Furthermore, Steinbock (2010) cites Nokia’s Chairman Jorma Ollila saying:

“It’s not like we have 300 million+ customers in the U.S... There are four to five customers who control access.”

The operators, obviously, have a somewhat different viewpoint:

“The attitude at Nokia was basically: ‘Here is a phone. Do you want it?’ Nokia wouldn’t play by the rules here, and they have paid a price.” – an executive at a North American network operator (O’Brien, 2009)

In the covered secondary material, problems in operator relations were mentioned 17 times. Looking at the distribution over the examined time period, the first remarks are in 2002-2004 while most occurrences take place in 2009. Thus, it appears that collaborating with operators in the U.S. has traditionally been a major weak point for Nokia. While Nokia had pursued a global strategy forcing operators to accept non-tailored products, large operators seem to have developed resistance and combined with market power, the relationship between Nokia and U.S. operators had become inflamed.

However, Kari-Pekka Wilska, the president of Nokia Americas, stated in 2002 that Nokia had put a lot of emphasis on building solid operator relations in the United States, and Southwestern Bell, for example, had build a large logistics center close to Nokia's plant in Dallas. (Häikiö, 2002) As also evident in the interview with Professor Hämäläinen (Section 5.2 Interviews), this was a moment in history where Nokia was still in good terms with the U.S. operators.

Now looking at Nokia's strategic responses (Table 9) we see that there were 7 occasions in 2005-2010 where Nokia has clearly indicated that it will focus more on operator cooperation.

"We have definitely put more emphasis on our relationships with operators in the past 12 months" – P. Alapietilä, President at Nokia (Schwartz, 2006)

"In the past, we had a one-size-fits-all mentality that worked well on a global basis but did not help us in this market. ... That has changed now, and there is a recognition within the company that we have had to change our attitude about how we approach this market." – M. Louison, President of Nokia North America (O'Brien, 2009)

Clearly, there was recognition at Nokia that its approach to the U.S. market needed a change. To improve its situation the company launched and promised to launch several tailored phones for the market (response #1) in addition to the additional focus on operator cooperation (response #2). However, the actions taken by Nokia don't seem to have been adequate (see e.g. Figure 19). Although a general belief seems to exist that Nokia stuck to demands that the American carriers refused to accommodate, the details of the glitch remain to be disclosed:

"Of course only Nokia and the carriers know the real issues. ... The rest of us are speculating." – M. Gartenberg, Analyst at Gartner (Boutin, 2010)

Table 9. Nokia's responses in secondary data

| | Nokia's actions | 2002 | '03 | '04 | '05 | '06 | '07 | '08 | '09 | '10 | '11 | Total |
|---|---|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 1 | Launched tailored phones for operators or U.S. market | | | 2 | 1 | 2 | 3 | 3 | 4 | 1 | 1 | 17 |
| 2 | More focus on operator cooperation | | | | 1 | 1 | | | 4 | 1 | | 7 |
| 3 | Launched new CDMA phones | | | 1 | 1 | 2 | 1 | 1 | | | | 6 |
| 4 | Launched clamshell phones | | | 1 | | 1 | | | | | | 2 |
| 5 | Increased presence in the U.S. | | | | | 1 | | | 1 | | | 2 |
| 6 | Adopted Windows Phone 7 | | | | | | | | | | 2 | 2 |
| 7 | Cooperation with Sanyo to produce CDMA phones | | | | | 2 | | | | | | 2 |
| 8 | Develop Symbian to match expectations | | | | | | | | | 1 | | 1 |
| 9 | Develop Meego | | | | | | | | | | 1 | 1 |
| | TOTAL | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 1 | 1 | 3 | 10 |

The next explanation given in 12 sources is that of *Nokia focusing on GSM instead of CDMA* which was predominant in the United States. Davies (2006) describes the situation as follows:

Initially, Nokia was convinced, along with almost everyone else, that Qualcomm's standard, called code division multiple access, or CDMA, would fail. Nokia instead focused on a competing standard that became the dominant wireless technology in the world. ... While CDMA has made inroads, GSM is still the most prevalent wireless technology in the world. But with high-profile carriers like Verizon and Sprint using Qualcomm's CDMA technology, Nokia and other wireless phone makers have realized they also must make phones using that technology if they are going to improve their sales.

As the U.S. market remained fragmented in terms of technology with carriers controlling access, Nokia's "one size fits all mentality" did not work in the United

States. Nokia promised, in several occasions, to tailor for the U.S. market and even specifically launch new phones with CDMA technology (response #3) to widen its CDMA portfolio but with limited success. This hesitation to implement CDMA also had its roots in the long-lasting debate between Qualcomm and Nokia over some CDMA related patents and Nokia's reluctance to source CDMA chips from Qualcomm:

“Nokia's weakness in CDMA stems largely from its resistance to buying computer chips from Qualcomm Inc., the San Diego firm that developed the technology. Most phone manufacturers buy their CDMA chips from Qualcomm. Nokia figured that by developing its own chip or using chips made by other manufacturers, it could avoid buying from Qualcomm, saving money in the process, analysts said. But the strategy didn't work, and Nokia lagged behind. “
-Hughlett (2006)

In addition, Nokia had counted on Texas Instruments to provide them with competitive CDMA chips, but Texas Instruments had their focus on a different technology variation, CDMA 2000 EV-DV, not well accepted by the major operators who had opted for CDMA 2000 EV-DO. At that moment Qualcomm had around 90 percent of the CDMA chip market. (Davies, 2006)

In more recent sources (2010-2011) there are no remarks on CDMA related problems, perhaps, due to part of the industry converging towards 3GPP Long-Term Evolution (LTE) based technologies instead of 3GPP2 CDMA. For example, Qualcomm announced in November 2008 that it favors LTE followed by a decision by Verizon Wireless to invest in LTE as the basis for its future wireless cellular network (Reuters, 2008). Another reason might be the launch of competing products such as iPhone and Android phones that have intensified competition in the industry and drawn attention to other, perhaps, even more important issues.

Third, in 10 instances in 2009-2011 *Symbian was considered a possible root of Nokia's problems* in the United States. In a Forbes article Woyke (2010) summarizes Nokia's Symbian situation as:

Well-regarded until about 2007, Symbian has suffered from its incompatibility with touch-screen devices. That defect has since been corrected, but Symbian is still largely viewed as outdated and unwieldy, particularly in comparison to sleek operating systems like Apple's iOS and Palm's webOS.

Thus, Nokia's Symbian should also be viewed in the context of its competitors. Without the presence of such strong new competition, Symbian and its recent, more developed releases could have been considered competitive for a much longer time. This competition may have also lead into a lot of people questioning Nokia's Meego strategy and the relative sluggishness in its development. (see e.g. Gruman, 2010) Still, no matter what the actual reasons are, Nokia clearly hasn't met the goals and expectations set for the development of its operating systems further complicating its already difficult situation in the United States.

In response to the critique on Symbian and Meego development Nokia has announced to focus on the development of both operation systems (responses #8 and #9) facilitating ease of use and adding functionalities. As late as 2010 at Mobile World Congress head of Nokia Solutions Anssi Vanjoki announced that:

“Operators haven't accepted Symbian since it has been fragmented as a programming platform. Symbian 3 will change the situation. It is uniform as a programming platform. ... Complaints have been going on for three years. They have been justified. Symbian 3 will end these talks.” (Salminen, 2010, originally in Finnish)

It could be concluded, therefore, that Nokia had determined to reach its competitors by developing its existing Symbian operating systems while acknowledging its shortcomings. In the same talk Vanjoki also commented on Meego development by:

The MeeGo programming platform we started with Intel will take us permanently back back to the position in which are used to being. (Salminen, 2010, originally in Finnish)

Summing up the two statements by Vanjoki, the direction seemed to be clear for Nokia and that was focusing on the two systems in the development of which Nokia had played a major role. However, shortly after nominating the new CEO Stephen Elop, Nokia announced a complete turnaround in strategy. On 11th February 2011, Nokia reported that it will adopt Windows Phone as its primary smartphone platform leaving Symbian to feature phones and MeeGo for “longer-term market exploration of next-generation devices, platforms and user experiences” (Nokia, 2011e) followed by chairman and former CEO Jorma Ollila expressing his full support and approval of the new strategy saying that Nokia allied itself with Microsoft because the Symbian operating system would not have been sufficiently competitive in the long run. In addition, he added that this “was a very good situation from Nokia’s point of view because there were interesting partners on offer, and we were able to choose which one we could make the best deal with.” (YLE News, 2011b)

Now, let us have a closer look at the development of the competitive situation in the U.S. market. In six cases, *intense or intensified competition* was given as a reason for Nokia’s weakening performance in the United States. It is worth noting that all of these instances fall into the period of 2008-2010.

“Nokia faces competition everywhere. At the high end from Apple, in the midrange by Research in Motion, and by the Koreans and the Chinese in the low end.” - Sherief Bakr, a Citigroup analyst (Schwartz, 2009)

“... the growing popularity of smartphones from Apple, Research In Motion, Samsung, LG, and the emerging dark horse HTC, are likely to deal Nokia’s U.S. hopes a series of crippling body blows.” (Medford, 2008)

As evident from the above citations, Nokia now faces increasing competition in the whole range of its offering. While manufacturers such as Apple and RIM have challenged Nokia in the midrange and high end, there is also now more competition in the low end, traditionally dominated by Nokia. In a way Nokia's new strategy (discussed above) aims at covering the needs of the whole portfolio by offering Symbian S40 based devices (under Mobile Phones business group, see Figure 24) in the low end and Windows Phone OS based devices in the midrange and high end (under Smart Devices business group). Furthermore, Meego OS will serve as a basis for experimentation and certain models in the high end (Nokia 2011e) (see responses #6, #8 and #9).

Explanation #6 *delay in offering clamshell phones* was considered a fairly important factor in 2004-2006 when consensus developed that a bulk of consumers had a preference for clamshell models.

"Nokia was late reacting to demand for clamshell phones, hinged models that flip open. Nokia had built its empire on the "candy bar" model, phones formed in one solid piece." (Hughlett, 2006)

Still, it appears that Nokia wasn't simply late reacting to the change but they estimated that the market would develop in a different direction. Many analysts consider that Nokia's foot-dragging was due to several reasons:

"I think they felt the candy-bar phone would conquer all. It was a pride thing."
Neil Mawston, Analyst at Strategy Analytics (cited in Hughlett, 2006)

"It may have been an economic thing too. Clamshells are more expensive to make, requiring two separate circuit boards, one for each side of the hinge." M. Hughlett (2006)

"Nokia thought, [The clamshell] can't be worth it. They just took a gamble and hoped it would be a fad." Neil Strother, analyst at NPD Group (cited in Hughlett, 2006)

Regardless of the real reasons, the demand for clamshell phones developed rapidly in the United States and Nokia needed to react. Since 2004 Nokia has launched several clamshell models and the secondary data does not indicate clamshell phones as a problem area after 2006. Thus, it is probable that the absence of clamshell designs lead to some deterioration of Nokia's market share in the U.S. but, eventually, the company managed to patch its device portfolio.

Explanations #7 and #9 have to deal with the design, innovativeness and attraction on Nokia's phones accounting and appeared 8 times in 2005-2010 in the secondary data. Vice president Jack Gold of Meta Group summarizes Nokia's U.S. offering in 2005 as:

"Nokia didn't have the coolness factor. They didn't really do flip phones; they were a little late with cameras, and they didn't push them. Coolness in the consumer space is a big deal, and they were stodgy."

Two years later in 2007, leading analyst Jussi Hyöty of FIM Bank commented:

"Design has been problematic for Nokia. – Motorola, Samsung and LG all have a strong portfolio of thin models, which probably explains why trend aware American consumers have bought these products" (YLE News, 2007, originally in Finnish)

On top of these design related issues, Nokia's offering not has been viewed as appealing since Nokia hasn't been able to include its whole portfolio (explanation #8), especially high end devices (explanation #10), in the operators' offering (see Table 3). This has evidently lead to a situation where many Americans currently view Nokia as a company focused on low-end and mid-range phones or not being familiar with the Nokia brand at all (see discussion on operator dominance in Section 5.2). However, this problem traces

back to problems in operator cooperation (#1) and lack of U.S. market specific models (#4) and cannot be solved in isolation.

Finally, the last explanation #11 (with occurrence ≥ 3) deals with the application development environment and is fairly recent in nature (2010-2011). This criticism relates strongly to the Symbian environment that was considered fragmented as a platform for application development (see e.g. Salminen, 2010) and both Meego and Windows Phone operating systems aim at improving this situation (actions #6 and #9). In addition, Nokia tries to improve the existing Symbian environment by bringing Qt and web runtime application development frameworks for the developers:

“It is difficult to develop applications for the basic Symbian, but this should also be fixed along with Qt and web runtime. Obviously, there is a lot of work to be done. One has to face the challenges with a humble attitude.” – Ari Jaaksi, Head of Meego Development at Nokia (Linja-aho, 2010, originally in Finnish)

Thus, the difficulties that Nokia has experienced in the United States constitute a complex and interrelated set with identifiable historical patterns, but many have lasted for the whole duration of the study (2002-2011). In order to resolve these issues, Nokia taken a number of actions but the most critical problems related to operator cooperation and tailoring of products for the market still remain.

Interviews

Related to Nokia's problems in the United States, the interviewees raised a number of important themes. Firstly, Hämmäinen (2010) states that Nokia's situation in the United States has always been difficult both in handsets and on the network side. To fully understand what has been happening, Hämmäinen said, one has to comprehend that the two sides of Nokia's business are linked and make the company vulnerable.

“At Nokia, the network and the handset business have been connected. Nokia hasn't been able to operate freely on the handset side. Traditionally, the operators have bought both handsets and networks from one supplier. The intentions of Nokia to separate the handset business from its networking business have lead to some operators telling Nokia that they would reconsider their network provider if Nokia didn't comply. That's why Apple, Google and Microsoft who come from a different direction haven't been affected. They are not vulnerable in this way [since they don't have network business].”
(Hämmäinen, 2011)

Thus, in many ways Nokia's hands have been tied. With the operators calling the shots, Nokia has not been able to introduce phones with e.g. Internet capabilities since that was not in the operators' interest. According to Hämmäinen (2011) it was not until Apple shook the operators with its iPhone that the U.S. operators allowed also others to launch phones with similar capabilities. Currently, he claims, Nokia could sell more freely if they only had competitive mid and high end models together with a competent brand.

Rauhala (2011) agreed with respect to the operators' dominance but also that Nokia's strategy and the operators' interests have been in a long-lasting conflict:

“The operators desired tailored models while Nokia was aiming at large volumes and cost leadership. This combined with fast growth in China and Asia

in general and Nokia's decision to focus on these markets. I guess it is natural not to focus on a market with wrong technology, that is operator-driven and presenting slow growth."

Another question also well covered in the secondary material is the availability of Nokia's models (see Table 3). The unavailability, then, is a result of both consumer choice and operators maximizing their profit and other interests.

"Nokia's models are not available in the United States the way they are in Europe. One might ask to what extent this has been the consumers' choice. Obviously, the operators offer what the consumers want but also what gives them the highest profits. This traces back to Nokia's decision not to tailor and maintain the handset business separate from the operator business."
(Hämmäinen, 2011)

Regardless of the reasons, not being well represented in the operators' offering made Nokia appear a low-end brand and as Rauhala (2011) noted, their products were mostly viewed as substitutes for a packet of coffee. This also relates to the brand dispute between Nokia and the U.S. operators. Since both Nokia and the U.S. operators had strong brands both insisted on selling under their brand. (Rauhala, 2011) More recently, fighting fiercely for its decreasing market share, Nokia might be more willing to bend and assent to the operator's requirements in exchange for a solid distribution deal and visibility in marketing.

Finally, the Qualcomm dispute was also raised up by in one of the interviews (Hämmäinen, 2011). While at first Nokia refused to source chipsets from Qualcomm e.g. to cut down costs, they realized they started to lag behind, settled their controversy and restarted shipments. (see also Hughlett, 2006)

5.2. Characteristics of the U.S. market

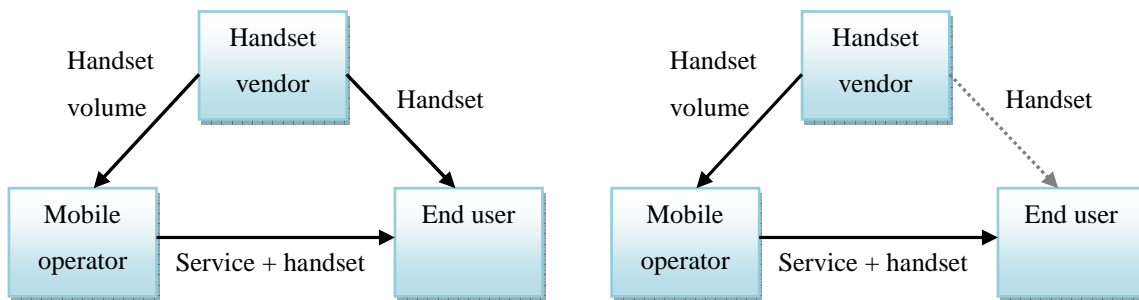
Since a structured analysis of the U.S. market was already carried out in Section 3.4, the purpose of this section is to complement that analysis with the observations that were gathered during the collection of primary and secondary data related to Nokia in the United States. Furthermore, since Section 5.1 already discussed (or at least touched upon) many of the characteristics of the market this section provides a brief overview of those findings, i.e. it does not intend to provide an extensive characterization of the market.

“We felt we could teach the U.S. market how we do business elsewhere, and frankly, that failed. Now we just want to act, based on the needs and requirements of the market.” – O-P. Kallasvuo, CEO of Nokia (Landler, 2007)

As pointed out by Olli-Pekka Kallasvuo (above), the U.S. market differs greatly from most other markets in the world. In what follows, the characteristics with the highest occurrence in the case study material will be discussed.

Operator market power

In Europe, mobile handset and operator businesses are still somewhat separated from one another even though the operator sales of subsidized (and locked) handsets has been growing e.g. due to the legalization of bundling (in Finland on the 1st of April 2006) (Liikenne- ja viestintäministeriö, 2008). The difference between the general European and U.S. sales channel models is presented in Figure 26.



**Figure 26. European (left) and U.S. (right) sales channel models
(adapted from Tallberg 2004)**

It is worth noting that before the legalization of bundling in Finland, most of the handsets were sold by handset vendors and the link between handset vendors and operators was weak. However, in most European countries bundling has traditionally been legal and the link fairly strong. (Tallberg, 2004)

In the secondary data, operator's market power has been described e.g. as follows:

“What makes the U.S. business unique is that it is very much driven by carrier. In other markets, distributors and retailers also play a role.” (Steinbock, 2010)

“In the United States, operators have historically played a gatekeeper role, deciding which phones their subscribers can use for what rate and then steering them toward services controlled by the operator.” (Landler, 2007)

“It's not like we have 300 million+ customers in the U.S... There are four to five customers who control access.” - J. Ollila, Nokia's Chairman (cited in Steinbock, 2010)

The three quotations (above) well summarize the power possessed by mobile operators in the U.S. market. The last comment by the former CEO and current chairman Jorma Ollila clearly highlights the hold that the largest operators have of the sales channels and that, in practice, operators cannot be bypassed. In addition, operators tend to require tailoring of the phones including design, branding (e.g. T-Mobile Comet) or co-

branding (Verizon iPhone), operator specific software and services and subsidization schemes:

“Carriers have lots of clout, particularly in the U.S. They are the prime phone retailers, subsidizing the devices' cost by tying them to service plans. Carriers often want custom features, cosmetic and technical, that can raise costs for phone makers.” (Hughlett 2006)

Senior analyst Hannu Rauhala clearly shares the observation:

“The U.S. market is very much operator-driven. The operators decide which phones are sold, when and at what price. Their brands are strongest than those of manufacturers. --- The operators handle around 90 % of the distribution to the end customer. If you don't get along with operators, you are out of the market.” (Rauhala, 2011)

Professor Heikki Hämmäinen (interview #1) concurred, but added, that compared to the situation some years ago the operators now give handset manufacturers more freedom in product design (see also Section 5.1 Interviews).

“The United States is a high end market and very operator centric. However, getting along with operators would now be easier if Nokia had good devices. The operators have loosened their grip, they are not as jealous anymore.” (Hämmäinen, 2011)

Intense and changing competition

The U.S. mobile phone market is one of the most competitive in the world, especially in the mid range and high-end. In the high-end segment, the launch of iPhone by Apple on the 29th of June 2007 (Levine, 2007) signified an irreversible moment for the industry followed shortly thereafter by the unveiling of the Android distribution on 5th

November 2007 (Hard, 2007). In The New York Times dated 10th December 2007 Gartner analyst Carolina Milanesi summarized:

“There’s no doubt competition [in the U.S. mobile phone market] is intensifying.” (Landler, 2007)

For traditional mobile phone manufacturers the entering of traditional software companies not only added to the already fierce competition but also created ambiguity as to how the future of mobile phone business would look like. The then CEO of Nokia Olli Pekka Kallasvuo commented:

“It’s very clear that Apple, Google and other players are bringing in a lot of new directions. Convergence is a nice, dandy word, but it means industries colliding.” (Landler, 2007)

More recently (2009-2010), especially LG, Samsung, Apple and Android manufacturers have managed to increase their share of the market, putting the traditional companies under yet more stress. Furthermore, the profit margins in the end-high remain high (Mustonen 2010) due to successful differentiation both in hardware (cameras, display technologies, materials etc.) but even more so in operations systems and other software.

“The markets for advanced phone models and combined devices are in the middle of a dynamic and very competitive time period in the Unites States...” (Mustonen, 2010, originally in Finnish)

“The market share of Nokia will drop since the Koreans have already conquered half of the U.S. mobile phone market. Samsung and LG are developing devices that attract buyers. ... Apple and RIM are going strong.”

R. Llamas, IDC analyst (cited in Herrala 2009, originally in Finnish)

Senior analyst Hannu Rauhala (2011) concluded that competition is fierce as in consumer electronics in general but also different from that of Europe.

“The competition is of operator customerships. -- You have to discuss with big operators who are wholesale buyers and distributors to end customers.”
(Rauhala, 2011)

The transformation from hardware to software focus in the mobile handset industry has allowed traditional software companies to enter the market and yet intensified competition. Currently, it would appear that the change is irreversible and similar hardware will eventually be available for everyone. In the near future this development would mean a fundamental change in the business model leading to a competition of ecosystems (see e.g. Nokia 2011e) i.e. a combination of hardware, operating system, applications, application stores, services etc. Where this transformation leads remains open, but from the competition point of view it may actually serve to raise entry barriers and lower the number of companies in the industry. Instead of producing a mobile phone, companies will need to either develop their own or integrate into an existing ecosystem to survive, especially in the smart phone business where applications and operating systems play a major role.

Professor Heikki Hämmäinen (2011) commented on the transformation as follows:

“This doesn’t mean that hardware would be easy or secondary. But the profits and strategic moves will go to the software side [of the business]. -- Hardware manufacturers have fallen behind. All the Americans, Google, Apple, Microsoft etc. are software-driven. A critical difference is that software business is very dynamic and everyone including the CEO knows how to write code. – The hardware manufacturers are all ran by “bankers” who have no such understanding of the underlying technology. Thus, hardware companies cannot react as fast or make fast strategic changes.” (Hämmäinen, 2011)

Subsidization of phones

Subsidization of sold phones is an aspect that also greatly distinguishes the U.S. market from most other markets in the world. While practically all phones are sold subsidized, the American consumers are not used to paying “the real price” of their mobile phones. As Boutin (2010) puts it:

“Here, we expect our smartphones to be cheap (thanks to carrier subsidies as high as \$350 for an iPhone) and our monthly bills to be high. That’s the opposite of most of the rest of the world, where the \$32 unsubsidized Nokia 1616 rules.”

Even if Boutin’s reference to the ‘Nokia 1616 ruling in most of the rest of the world’ could be considered slightly misguided or, at least, rather U.S. centric homogenizing (most of) the rest of world into a low-end market he does make a good summary of the fundamental difference in the consumers’ mindset. In addition, buying the phone and the call plan separately does not usually pay off due to the fact one often ends up paying the same monthly fee with and without the phone. For instance, Verizon offers iPhone 4 (16 GB) for \$199.99 and a 450 minute monthly call plan for \$39.99 with a 2-year contract. Without the iPhone 4 (regular price at Verizon \$649.99), the call plan would still cost exactly the same \$39.99. (Verizon 2011) Thus, getting the iPhone and the call plan separately would only allow one to avoid the 2-year engagement but cost \$450.00 more.

The existing subsidization schemes practically leave the consumers no choice but to purchase their phone from the operator unless they are willing to assume the additional cost. This arrangement obviously contributes to the already substantial market power that operators possess.

“The operators have had a strong role and a tight grip on handsets. What operators decide to offer dictates what will be sold.” (Hämmäinen, 2011)

CDMA technology

Technology wise, the major U.S. operators have split up in two camps, namely, CDMA and GSM. While Sprint and Verizon networks are CDMA, T-Mobile and AT&T rely on GSM preferred in most of Europe. (German, 2011)

“CDMA is an underlying technology for a cell phone network. Globally, the dominant technology is GSM, which Nokia helped develop. But in a few key markets--Japan, Korea and the U.S.--CDMA is big. ... About half of the U.S. market runs on CDMA”. (Hughlett, 2006)

This presents a challenge for mobile handset manufacturers as they have to ship phones with two different chipsets to cover the whole market. On top of tailoring (phone design, software etc.) phones for operators having to manufacture phones with different chipsets constitutes a major cost factor limiting the available economies of scale. Still, despite the additional costs involved, most mobile phone manufacturers have CDMA phones in their portfolio. Davies (2006) summarizes the situation from the manufacturer’s point of view as:

“But with high-profile carriers like Verizon and Sprint using Qualcomm's CDMA technology, Nokia and other wireless phone makers have realized they also must make phones using that technology if they are going to improve their sales.”

Added to this, CDMA phones don’t generally support SIM-cards and porting a phone to another carrier’s network is far from straightforward:

“Since CDMA phones don't use a SIM card, you can't just pop in a new SIM for instant activation with a new carrier. Instead, you'd have to go to the desired carrier and have them activate for you. While that's technically possible, unfortunately, I'd say your chances are pretty slim. The CDMA carriers such as Sprint and Verizon Wireless prefer that you buy a phone from them, so I can't

see them being too excited about helping you circumvent that process.”
(German, 2007)

In the interview, Hämmäinen (2011) added that despite the introduction of GSM, that would have allowed separation of phone sales from subscriptions, the U.S. market had already established its standardized way of selling phones and subscription together and the operators were reluctant to change the state of things.

“Technology wise the U.S. market presents some special characteristics that one should acknowledge. They didn’t believe in international standards. There’s been the CDMA camp, a strong TDMA camp. And GSM came on top of all the other things. One can’t understand the development of the market share of Nokia in the United States by looking at the aggregate figure without analyzing each technology separately.”

Changing role of the mobile phone

In addition to the above explanations with high occurrence in the secondary data, the interviews clearly raised two relevant themes. Firstly, there appears to be a difference in the way people view mobile phone as a device and the role of the Internet.

“[The mobile phone] has become part of the Internet. That is the most significant fundamental difference between the European and American mindsets. While in Europe people think that Internet will come to the mobile phone, Americans consider mobile phones another means of accessing the Internet.” (Rauhala, 2011)

Secondly, the whole industry has changed from hardware to software focus especially in the United States where the majority of large software companies have traditionally been located. This development has been facilitated by the maturation of hardware (i.e. display, processor, camera etc.) allowing software companies to only focus on their core business while adapting fairly standardized hardware.

“In mid 90’s the understanding was that Internet and data services will break through but they didn’t until around 2005. Before that the business was globally centered on speech and SMS. -- The technologies weren’t simply mature enough. -- Then the market gradually became software-driven, the Internet won over mobile and software over hardware and the Americans over the rest of the world.” (Hämmäinen, 2011)

These changes also seem irreversible in the process where competition focuses on developing more complex ecosystems instead of individual devices. Another important aspect is that mobile phones will form only a part of the ecosystem that comprises desktop and laptop computers, tablets, other portable devices, operating system(s), application stores and so on. Parallel to the development of physical devices and software there are cloud services and virtualization that are gaining momentum and may be of great importance in the future. (Hämmäinen, 2011; Rauhala, 2011)

6. Discussion and conclusion

Competition and transformation of the mobile phone industry have evoked increasing interest and discussion among both academics and practitioners. While in the late 1990s the mobile phone business was dominated by a few large MNCs traditionally strong in consumer electronics, the competitive landscape in 2011 is far more diverse and the competition has shifted towards software and ecosystems. Nevertheless, distinct geographical markets seem to retain some of their distinctive features related to overall market composition, market power, technologies etc.

While in Europe, the mobile phone manufacturers have traditionally sold phones under their own brands through a large variety of retailers, the U.S. market remains strongly dominated by operators. The operators, who carry out close to 90 % of sales to the end customer, exercise their power e.g. by forcing their brands, require tailoring of the phones and create lock-in via heavy subsidies, family plans etc. In addition, while Europe has been fairly homogeneous with regard to network technologies, the operators in the United States have, until now, opted for two different technologies, namely, CDMA (Verizon and Spring) and GSM (T-Mobile and AT&T).

The differences in the European and U.S. markets also become apparent when looking at the performance of Nokia, the case company, on the two continents. As implied by both secondary and primary data, Nokia has pursued an archetypical global or “one size fits all” strategy focusing on economics of scale in areas such as purchasing, production and logistics. Combined with the mobile operators requiring high levels of tailoring, branding and control over distribution, Nokia has been unable to develop an offering that would meet the strategic imperatives of the two. Moreover, Nokia has publicly promoted GSM further complicating its relations with operators running CDMA networks. This development has lead to the operators representing very few Nokia models with practically none in the high end.

During the last decade or so, Nokia has claimed a number of times that it will recapture its lost market share and come to terms with the American operators. Apparently, the efforts have been inadequate. As Rauhala (2011) stated, the U.S. operators are practically giving away inexpensive Nokia phones to their customers as a substitute for a packet of coffee for visiting their stores. On the other hand, he also concluded that Nokia does have good opportunities, very little to lose, and with the right partner a real chance to turn the situation around.

The main research questions were formulated as follows:

- 1) What are the specific characteristics of the European and the U.S. mobile phone markets?
- 2) In what respect are the two markets fundamentally different and why?
- 3) Why has Nokia been unsuccessful in the U.S. market?

6.1. Theoretical implications and directions for future research

Even though this thesis does not aim at theory building as such due to inherent complexity of the studied phenomena and unsuitability of the selected single case methodology for theory building, the framework of Figure 27 will be discussed in light of the findings of the study. Additionally, the findings serve as a basis for proposals for future research.

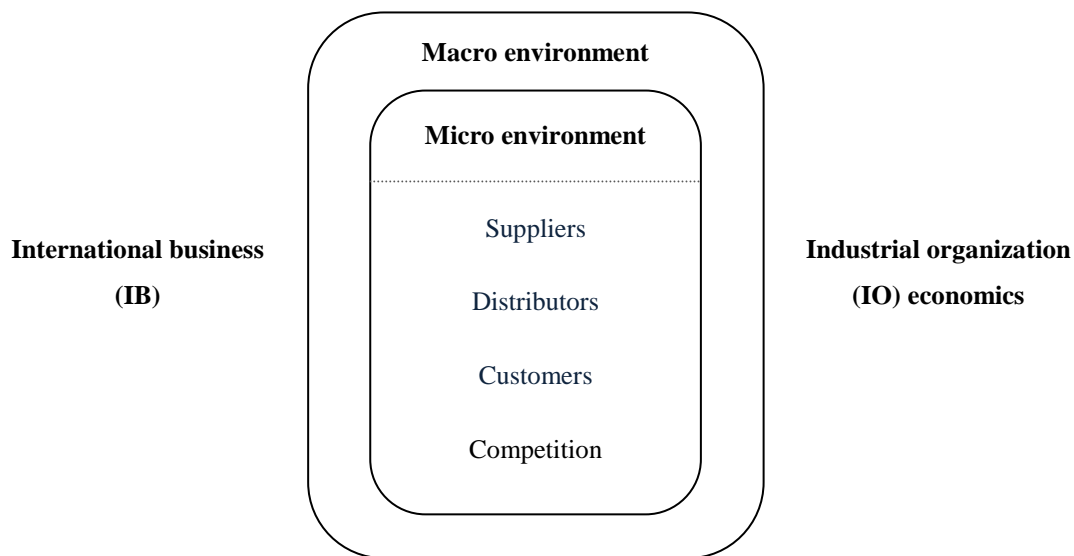


Figure 27. Analytical framework

Looking at the *micro environment* from the viewpoint of the mobile phone manufacturers there are several important implications. First, in the studied industry the links between the different actors (i.e. suppliers, distributors and customers) are generally strong and their roles often overlap. In the United States mobile operators typically play a dual role of a customer to the mobile phone manufacturer and distributor to the end customer. This is also reflected when looking at the channel options available to the handset manufacturers. While the manufacturers source most components (processor, camera etc.) from a variety of suppliers in both Europe and the U.S., the only feasible sales channel to reach the end customer in the U.S. is through mobile operators (see sections 3.3 and 5.2). In the European market, however, a greater number of channel options are available since mobile operators have significantly less control over the distribution network. Thus, in Europe handset manufacturers carry out not only wholesales to the mobile operators but also sell via distributors and retailers, and directly to the end customer in flagship stores and Internet sites (e.g. www.nokia.com).

In regard to competition, the research revealed a number of important implications. First, while in Europe mobile handset manufacturers compete over consumers' minds, the marketing and negotiation efforts in the United States are typically targeted at mobile operators who play the role of a gatekeeper to the consumers (Landler, 2007). A

few handset manufacturers (Nokia) have made an attempt to bypass the operators and sell directly the end customers but with limited success. Second, in both Europe and the United States, the competition, especially in the high end, has moved from hardware to software focus (Hämmäinen, 2011). Complemented by the introduction of the Android OS, this shift has significantly changed the competitive landscape of the industry while new players (e.g. HTC) have acquired significant shares of the market. This has also added the overall degree of competition in the industry (see Chapter 5). The imperfect nature of competition and its causes will be discussed later while reflecting upon IO economics.

The findings related to the increasing complexity of the business network, linked actors, overlapping roles and struggle over control find support in earlier research. Where Dedrick & Kraemer (2007) demonstrated the efforts of PC manufacturers to streamline their distribution channels and remove middlemen, Li & Whalley (2002) showed how the traditional value chains of the telecommunications industry have already turned into more complex networks with new forms of competition. The recent development in mobile technologies has further added to the complexity and led to a discussion on yet more complex mobile ecosystems that spread out over several traditional industries (Basole, 2009; Gueguen & Isckia, 2011).

Concerning future research, several interesting directions could be identified with respect to the micro environment. While based on the covered material the European and the U.S. markets both present unique characteristics in terms of their composition and competition, the (historical) reasons why such differences have come to be is not self-evident. Further research could be directed, for instance, at examining how the U.S. mobile operators have managed to acquire such market power while their European counterparts have not. Based on the work presented in this thesis, this new comparative research would be likely to touch a wider range of at least economic, technological and political factors and be highly interdisciplinary in nature. Second, focusing on the characteristics of competition in the mobile phone industry and the way it has changed in recent years would constitute a challenging study item. More specifically, one might

focus on the disruptive technology-driven change (from hardware to software), its effects on industry boundaries or the rise of Asian competitors in Western markets.

Now looking at the findings from the perspective of *International Business* as a discipline a number of implications can be identified. First, from the perspective of international business operation modes (see Figure 3) we found that in the mobile phone industry companies such as Nokia employ a wide range of modes but also that clearly different modes are used in different markets. Of the contractual modes the most recent example would be that of Nokia entering an alliance with Microsoft to, among other aims, gain better access to the U.S. market. In regard to exporting modes, due to financial and other resources available to an MNC, mostly direct exporting and own sales office / subsidiary modes are used while indirect exporting is marginal.

The use of investment modes was also found to be widespread. Nokia, for example, announced on 19th June 2007 the formation of Nokia Siemens Networks to strengthen its position on the network infrastructure market and to gain access into new markets where Siemens had established a permanent foothold. In addition, Nokia had for long established factories in low-cost countries and founded R&D centers around the world (NRC 2011). During the period of 2000-2010 Nokia also acquired a total of 30 companies including investments in minority positions (Nokia, 2011g).

Even though the work presented in this thesis does not concentrate on operation modes alone, the use of operation modes forms an integral part of mobile handset manufacturers' strategies to access and compete on foreign markets, and the decision on which modes to choose stems from its global strategy (Kim & Hwang, 1992). Further research could be directed e.g. in examining the differences in handset manufacturers' operation mode strategies in different markets as well as between manufacturers in each given market.

The mobile handset business is one the clearest examples of a truly global industry. The globalization impact on the mobile phone industry has become extremely visible as handset manufacturers operate via extensive global networks sourcing components,

funds and people around the world and market their products across continents together with other MNCs with complimentary offerings. Based on the analysis presented in this thesis it can be concluded, however, that significant differences in market structure and preferences still exist and e.g. opting for a global “one size fits all” marketing strategy would not suit all companies. These findings are in line with Zhang & Prybutok (2005) who stress that despite similar levels of development, the differences in technologies, usage patterns and political systems require adjusting on handset manufacturers’ part. Further research could be carried out e.g. to assess the “degree of global operations” of each of the large manufacturers to assess the benefits and costs of scattering operations.

Related to both globalization and brand management the findings of the thesis raise another interesting topic of possible future research. Where Nokia has been well-known for its global brand and its reluctance towards co-branding and especially selling under an operator brand, it seems that many companies need to a greater or lesser degree adapt to each market also regarding their brand. Rauhala (2011) believes that Nokia, for example, will most likely primarily utilize the brand of Microsoft when approaching the U.S. market and Nokia in other markets. Apple, like Nokia before, has also been extremely consistent in insisting the use of its brand including its visual elements. Examining how different mobile phone manufacturers use their brands and to what degree they adapt would make interesting future research.

The IO economics (see Section 2.4) and the related theories, then, provide a solid basis for an analysis of the mobile phone industry. Since IO economics is based on the assumption of imperfect competition, analyzing e.g. the imperfections resulting from the market power of mobile operators or oligopolistic competition between the handset manufacturers would make interesting research topics. In addition, some companies (e.g. Apple) have recently been able to differentiate their offering in a way that has allowed them to reach clearly higher than average profits while others are struggling to survive. From the marketing point of view, analyzing product differentiation, branding and pricing strategies would also make interesting contributions to the IO field.

The central SCP (Structure – Conduct – Performance) paradigm related to the IO economics could also be studied more closely in light of the mobile phone industry. One might claim, for example, that Europe would perform more efficiently as a market since the structure of the market is such that many companies compete directly over consumers while in the United States few mobile operators practically dictate what products are sold and by what means. The more liberal structure of the market would thus allow companies to act in a more efficient way leading to better locative efficiency. However, the subsidies offered by most operators in Europe and the United States add another imperfection whose effect is not straightforward to analyze. (see e.g. Daoud & Hämmäinen, 2004) While selling through the (subsidized) operator channel generally translates into splitting the profit margin with the operator, the subsidy may also persuade consumers into buying more expensive (and higher profit) devices and replacing their handsets with new ones more frequently. Moreover, the operators tend to contribute to marketing and promotion, and together with the cost benefits of whole sales allow cost reductions to handset manufactures.

6.2. Managerial implications

From a managerial point of view, the findings of the research have several implications for businesses involved in the mobile phone industry. Firstly, the mobile handset industry is one that has historically experienced extremely fast and often unpredictable changes. The U.S. market that was once considered stagnated presenting low levels of sophistication quickly became the leading market for high-end mobile devices. In addition, the mid- and high-end of the industry quickly became software-driven which attracted companies such as Google, Apple and Microsoft into the market and caught many of the traditional mobile phone manufacturers off guard. Thus, the companies involved in the mobile phone business need to actively follow trends and look for indicators of change. Obviously, the companies also need to be proactive in the sense that they, where possible, innovate and create change (take Apple and the tablet market for example). This calls for far greater agility than necessary in most industries.

Secondly, the global mobile phone (or device) market is far from homogeneous. According to Rauhala (2011), in the European market, the mobile phone is still considered a “Swiss Army knife” that consolidates whatever surrounds it, but the U.S. consumers view mobile phones as one means of using applications and services e.g. the Internet. Although not investigated within this thesis markets of e.g. Africa and Asia would add another dimension to the heterogeneity of the world market due to differences in purchasing power, tastes, technologies etc. Moreover, the markets are very different in regard to their composition. While in Europe, companies like Nokia may successfully reach the end customer via several different channels, in the United States, companies need to be aware of the operators’ control over the whole distribution network. However, given the dynamic nature and the constant struggle for power between the different players in the market, the situation may obviously change at some point.

Thirdly, based on the analysis of Nokia in the United States there are, again, several implications. Nokia seemed to believe that it could conquer the U.S. market using the same strategy that had served it well elsewhere despite the operator dominance. Looking at the performance of Nokia in the United States it would seem clear that a separate U.S. strategy focusing on the specifics of the market would have been needed. Additionally, while looking at the growth in markets such as China and India, Nokia seemed to neglect the potential and importance of the United States as a trend-setter on a global scale leading to the Nokia brand losing a significant share of its monetary value. Finally, it would seem that a company once known for its exceptional strategic agility became, to some extent, incapable of transforming and shaking off its legacy factors.

6.3. Limitations of the study

The research presented in this thesis was based on an analysis of primary data consisting of two interviews and secondary data encompassing 9 annual reports, 2 market analyses, 4 books, 42 news articles and 5 blogs. The secondary material was spread along the research time span, i.e. years 2002-2011, while both interviewees were carried out in 2011.

The research presented in this thesis is limited for several reasons. At the outset, the observed phenomena were approached from the viewpoint of critical realism (see Section 4.1.1) assuming that even though a factual reality exists it is only imperfectly apprehensible as the observations are distorted by the observer's own values, feelings etc. In order to enhance validity and reliability, the thesis relied on triangulation over multiple data sources consisting of both primary and secondary data. Nevertheless, the number of data sources was inevitably limited and due to the scarcity of available academic research, the thesis relies mostly on non-academic secondary data whose reliability, in some cases, could be questioned.

While the Nokia in the United States case brought another angle of observation and better insight into the U.S. market its explanatory power is limited. The analyzed case focused on a single company on a single market and only during a limited time span. Thus, the case alone does not allow generalization to other markets or companies and is to be considered descriptive rather than normative.

Finally, the entire study relied on information that was publicly available or published in the course of the study. Especially when analyzing the problems that Nokia has had with the carriers in the United States, this can be considered a major limitation. Even though some effort was made in order to gain access to insiders it quickly became obvious that both contractual and emotional hindrances prevented sharing such information also due to the relative proximity of the events.

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Appendix I. Reviewed books

Books

| | |
|---|--|
| Nokia - The Inside Story (2002) | <p>B1-1: Nokia had become well recognized by 1999 in the US while the brand strengthened against competitors such as Motorola.</p> <p>B1-2: Nokia had worked closely with operators AT&T, Sprint and Southwestern Bell.</p> <p>B1-3: Nokia became the market leader focusing on digital phones, an area which progressed slower in the US than in Europe.</p> |
| Nokia - Matka maailman huipulle (2009) | <p>B2-1: Organizational changes within Nokia</p> <p>B2-2: Nokia not successful in making deals with operators (said to probably be the most important reason)</p> <p>B2-3: Nokia late in following hypes & fashions</p> <p>B2-4: Nokia has avoided CDMA</p> <p>B2-5: Disputes with Qualcomm</p> <p>B2-6: Nokia decided to tailor products for the American market (Kallasvuo)</p> |
| Winning Across Global Markets - How Nokia Creates Strategic Advantage in a Fast-changing world (2010) | <p>B3-1: Nokia not experienced in tailoring for operators</p> <p>B3-2: Operators dominate, "four to five customers who control access" -Jorma Ollila</p> <p>B3-3: Nokia tried to adapt America to its models rather than adapting its offerings to the US market, "one size fits all mentality"- Mark Louison (president of Nokia North America)</p> <p>B3-4: Nokia decided to tailor its offering for operators and the US market</p> |
| Sijoittaja Yritysstrategioiden Pauloissa – Intohimona Nokia (2011) | <p>B4-1: Clamshell crisis lead to a decline in market share</p> <p>B4-2: Operators dominate, bad relationship with operators</p> <p>B4-3: Brand conflict operators vs. Nokia</p> <p>B4-4: Nokia had weak negotiation power in the U.S.</p> |

Appendix II. Reviewed news articles and blogs

| Nr | Type | Date | Source | Title | Why Nokia is/is not succesful in the US? | What will/did Nokia do? | Whose opinion? |
|----|--------------|----------|-------------------------------------|---|---|---|---|
| 1 | News article | 15.3.02 | ClickZ | Mobile Phone Sales Suffer First Negative Year | CDMA the dominant technology | - | Gartner Dataquest analysts |
| 2 | News article | 17.10.02 | Dagens nyheter | Nokia försöker skrämna kunderna | Nokia stronger in US since major operators have switched to GSM | - | Jorma Ollila, CEO |
| 3 | News article | 28.1.03 | Talouselämä | Moto kampeaa Nokian | Lack of operator cooperation | - | Thomas Lynch, Motorola CEO |
| | | | | | CDMA technology | - | - - |
| 4 | News article | 11.6.03 | New York Times | Nokia Warns of Lower Sales, Blaming Economy and SARS | Nokia upbeat because of new product introductions | | Olli-Pekka Kallasvuo, Nokia's chief financial officer |
| 5 | News article | 7.4.04 | New York Times | In a Surprise, Nokia Warns That Its Sales Will Be Down | Lack of clamshell designs | - | Barnaby Feder, journalist, Heather Timmons, journalist |
| 6 | News article | 15.10.04 | New York Times | Nokia Profit Off in Quarter; Handset Price Cuts Cited | Too few clamshell designs, color screens and cameras | - | Alan Cowell, journalist |
| | | | | | Lack of focus | | Jack Gold, analyst, META Group |
| 7 | News article | 17.12.04 | YLE (Finnish broadcast corporation) | Nokia ryhtyi taistelemaan markkinaosuudestaan | Lack of clamshell designs | Launch shell phones | Gartner, inc. |
| | | | | | Problems in operator cooperation | Tailor phones for operators | - - |
| | | | | | Phones not tailored for the US market | - | - - |
| 8 | News article | 24.1.05 | Fortune | Has Nokia lost it? | Lack of shell phones | - | J. Ollila, CEO of Nokia |
| | | | | | Problems in operator cooperation | - | Tim Boddy, Analyst, Goldman Sachs |
| | | | | | Design not attractive | - | - - and Jack Gold, vice president of Meta Group |
| | | | | | | More focus in operator cooperation | Pekka Ala-pietilä, President, Nokia |
| 9 | News article | 21.4.05 | Dagens nyheter | Nokia tappaa mobiilimarkkinat | Nokia is weak in technologies used in the United States | | Jorma Ollila, CEO |
| 10 | News article | 13.6.05 | USA Today | Nokia patches portfolio with 7 new phones | Few CDMA phones in offering | Nokia launched 3 new mid-priced CDMA phones for the US market | Hannu Rauhalu, Analyst, Opstock Securities |
| | | | | | Few models in offering in the US in general | | - - |
| 11 | News article | 5.3.06 | TMC News | Nokia seeks to reclaim U.S.: global leader believes new models and deal with Sanyo will return it to the top of sales chart | Lack of CDMA phones | Joined CDMA operations with Sanyo in Feb 2006 | John Jackson, Analyst, Yankee Group |
| | | | | | Lack of clamshell phones | Introduced clamshell models in 2004 | Neil Strother, Analyst, NDP Group |
| | | | | | Lack of tailoring for the operator | Introduced tailored models for operators | Tim Eckersley, Nokia senior VP for marketing in North America |

| | | | | | | | |
|----|--------------|----------|-------------------|--|---|--|---|
| 12 | News article | 21.4.06 | Sign on San Diego | Nokia falls short of wireless goals | Lack of CDMA phones | Joined CDMA operations with Sanyo in Feb 2006 | Timo Ihamuotila, Senior Vice President CDMA phones at Nokia |
| 13 | News article | 22.6.06 | Digitoday | Nokia ei vetäydy USA:n cdma-markkinoilta | Lack of CDMA phones in the offering | Provision of subcontracted CDMA phones for the US market | Doug Dawson, Nokia's communications director |
| 14 | News article | 10.8.06 | Digitoday | Kallasvuo: Nokialta erikoismallit Yhdysvaltoihin | Lack of tailored products for operators | More cooperation with operators | Olli-Pekka Kallasvuo, Nokia's CEO |
| | | | | | | Tailored phones for operators | - - |
| 15 | News article | 15.1.07 | YLE Uutiset | Nokialla vaikeaa Yhdysvalloissa | Design not attractive | | Jussi Hyöty, FIM Bank analyst |
| | | | | | Trouble in operator cooperation | | Tero Kuittinen, Nordic Partners analyst (B) |
| 16 | News article | 10.4.07 | Talouselämä | Nokia iskee amerikkalaiseen makuun | Products not well presented in retail shops | - | Retailer |
| | | | | | Operator relations | - | Journalist |
| | | | | | Top models not attractive to consumers | - | Tero Kuittinen, Nordir Partners Analyst |
| | | | | | | Introduce new products together with operators | O-P. Kallasvuo, CEO of Nokia |
| 17 | News article | 10.8.07 | Business 2.0 | Nokia: Smart phones, few US buyers | Few CDMA phones in the offering | | Michal Rev Lam, Journalist |
| | | | | | Nokia phones non-subsidized | | - - |
| | | | | | | Focus on high margin phones (Gartenberg's opinion) | Michael Gartenberg, Research Director, Jupiter Research |
| 18 | News article | 10.12.07 | New York Times | Nokia Pushes to Regain U.S. Sales in Spite of Apple and Google | Nokia reluctant to work with operators | Nokia promised to adapt to the US market | Olli-Pekka Kallasvuo, Nokia's CEO |
| 19 | News article | 10.1.08 | Tietokone | Nokia jopa nelinkertaistaa USA-erikoismallit | Lack of tailored products for operators | Nokia promised to deliver 6-12 tailored phones for the US market | Mark Louison, Chief of Nokia US |
| 20 | News article | 18.4.08 | Kauppalehti | Yhdysvaltain finanssikriisi tarrasi myös Nokiaan | Weak presence in the US market | Tailored odm products for operators | Rick Simonson, Head of Nokia Mobile Phones |
| 21 | News article | 28.4.08 | Kauppalehti | Nokia menetti älypuhelinmarkkinoita | Intensified competition (RIM and Samsung) | | Neil Mawston, Leading analyst, Strategy Analytics |
| 22 | News article | 5.5.08 | Reuters India | Nokia to offer many new phones in U.S. | Lack of CDMA phones, few models offered in the US | Launch CDMA phones and tailor phones for operators | Alastair Curtis, Nokia's chief designer |
| 23 | News article | 19.11.08 | Red herring | Recession To Stall Nokia's U.S. Invasion | Problems in operator cooperation | - | Cassimir Medford, Journalist |
| | | | | | Increasing competition by Apple, RIM etc. | - | - - |
| | | | | | The recession | - | - - |
| | | | | | Lack of CDMA phones | - | - - |
| | | | | | Offering not compealing | - | Shahid Khan, Analysts, IBB Consulting |
| 24 | News article | 12.1.09 | Fortune | Nokia's North American problem | Lack of adaptation to the US market | - | Jessi Hempel, journalist |
| | | | | | Lack of operator cooperation | - | - - |
| | | | | | | Increased presence in the US (opened offices and R&D) | - - |

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|----|---------------|----------|--|--|---|---|---|
| | | | | | | Started tailoring phones together with operators | Mark Louison, Chief of Nokia US |
| 25 | News article | 29.5.09 | Kauppalehti | Nokia räätälöi lisää USA:han | (Not mentioned) | Develop tailored products for the US market | Olli-Pekka Kallasvuo, Nokia's CEO |
| | | | | | | Closer relationship with distributors | - - |
| 26 | News article | 18.8.09 | Kauppalehti | Nokian ahdinko pahenee USA:ssa | New entrants gain market share | - | Ramon T. Llamas, Analyst, IDC |
| | | | | | Operators represent only Nokia's low-end devices | - | - - |
| 27 | News article | 2.10.09 | Talouselämä (citing Kauppalehti Optio) | Kallasvuon selitysten selitykset | Problems in operator cooperation | Deepen operator cooperation | Olli-Pekka Kallasvuo, Nokia's CEO |
| | | | | | Lack of operator specific products | Have developed tailored products with operators | - - |
| 28 | News article | 18.10.09 | New York Times | Nokia Tries to Undo Blunders in U.S. | Not tailoring its products for the US market | More focus on operator cooperation | Ari Hakkareinen, Nokia Business Development Executive |
| | | | | | Focus on European standards (GSM) instead of American (CDMA) | | Kevin O'Brian, Journalist |
| | | | | | Operator dominance | | Neil Mawston, Leading analyst, Strategy Analytics |
| 29 | News article | 22.10.09 | Kauppalehti | Nokia häviämässä pelin älypuhelimissa | Usability problems (Symbian) | - | Journalist, Strategy Analytics |
| | | | | | Intense competition | - | - - |
| 30 | News article | 4.11.09 | Kauppalehti | Nokian ikuisuushaaste | Operators' market dominance | - | Ramon T. Llamas, Analyst, IDC |
| | | | | | Lack of competitive high-end phones | - | - - |
| 31 | News article | 6.11.09 | Kauppalehti | Nokia asema USA:ssa käy entistä tukalammaksi | Operators' market dominance | - | Neil Mawston, Leading analyst, Strategy Analytics |
| | | | | | Operators support only selected platforms (not Symbian) | - | - - |
| 32 | News article | 18.11.09 | Kauppalehti | Megaoperaattorit Nokian suurin uhka | Operators' market dominance | - | Martti Häikiö, professor |
| 33 | News article | 12.12.09 | New York Times | Can Nokia Recapture Its Glory Days? | Bad user experience | - | Journalist |
| | | | | | Problems in operator cooperation | - | Carolina Milanesi, Analyst, Gartner |
| | | | | | Sluggishness in developing clamshell phones | - | Kai Oistamo |
| | | | | | Intense competition | - | Sherief Bakr, Analyst, Citygroup |
| 34 | Business blog | 15.2.10 | Venturebeat | Why can't Nokia sell phones to Americans | Nokia declined to tailor phones for operators | Tailor products for the US market (analyst's opinion) | Michael Gartenberg, Analyst, Altimeter |
| | | | | | Nokias are not trendy | | Paul Boutin, Journalist |
| | | | | | Phones in offering lack high-end features | | - - |
| | | | | | Different consuming habits (preference to subsidized phones, phone complemented by laptops) | | - - |
| 35 | News article | 16.2.10 | Kauppalehti | Nokia uskoo nousuun USA:ssa | Operators dislike Symbian-platform (dispersed, not user-friendly) | Launching developed Symbian version | Anssi Vanjoki, Nokia executive |
| 36 | Business blog | 19.3.10 | Sramana Mitra website | Nokia in The United States | Products not innovative/appealing enough | | Sramana Mitra, business blogger |

| | | | | | | | |
|----|---------------|------------|-----------------------|--|--|---|---|
| 37 | News article | 30.4.10 | Kauppalehti | Nokialla on kiire USA:ssa | Intense competition | More focus on US (analyst's opinion) | Neil Mawston, Leading analyst, Strategy Analytics |
| | | | | | Nokia lacks competitive models | Launching a US specific high-end model (analyst's opinion) | - - |
| 38 | News article | 11.7.10 | YLE Uutiset | Nouseeko nokia taas kerran kriisistään? | Weak brand in the US | Focus on visibility and marketing in the US (author's opinion) | Dan Steinbock, author, director of India, China, America institute |
| | | | | | Application offering not attractive | Develop Ovi store to be more attractive (author's opinion) | - - |
| 39 | Business blog | 9.8.10 | Fortune | Why Nokia's Android snub is a big mistake | Sticking to Symbian (and MeeGo) | Change to an OS with wide industry and developer support such as Android (Journalist's opinion) | JP Mangalindan, journalist |
| 40 | News article | 10.9.10 | Fortune | Can Stephen Elop Fix Nokia? | Outdated Symbian OS | | Jessi Hempel, journalist |
| 41 | News article | 12.9.10 | CNBC Money Control | Key problems facing new Nokia CEO Elop | Lack of tailoring for operators | | Reuters |
| | | | | | Reliance on outdated Symbian | | - - |
| | | | | | Weak developer base | | - - |
| 42 | Business blog | 10.10.10 | Forbes.com | Five Big Questions About Nokia's New CEO | Operator relations | | Elisabeth Woyke, Journalist, Forbes |
| | | | | | Symbian platform | | - - |
| 43 | Business blog | 23.10.2010 | Smartphone expert Ltd | Nokia is paying attention to North America, launches new contest with AT&T | Lack of commitment to the North American market | Nokia launched a competition together with AT&T to develop software for North American market | Purnima Kockikar, VP Forum Nokia at CTIA, Matthew Miller, Columnist |
| 44 | News article | 9.11.10 | Infoworld | Microsoft and Nokia: A tale of two elephants | Slowness in Symbian & MeeGo development | | Galen Gruman, Journalist |
| 45 | News article | 19.1.11 | Tietoviikok | MeeGo näyttää teille vielä, lupaa Nokia | Symbian platform (difficulty in developing applications) | Develop MeeGo to offer better user experience and possibilities for developers | Ari Jaaksi, Nokia head of MeeGo development |
| | | | | | Lagging application store | | - - |
| | | | | | Operators' dominance | | - - |
| 46 | News article | 18.3.11 | SvD Näringsliv | Avtal med Microsoft stärker Nokia i USA | | Adopted Windows Phone 7 (to differentiate and gain from Microsoft's brand) | Strategy Analytics |
| 47 | News article | 24.3.11 | Networkworld | Nokia looks to make Windows Phone 7 hottest mobile OS on the planet | | Nokia launched Nokia Astound phone tailored for T-Mobile USA | Kai Öistämö, Nokia Executive Vice President |
| | | | | | | Join forces with Microsoft to jointly develop Nokia phones running Windows Phone 7 | - - |

Appendix III. Reviewed annual reports

| Annual report | Why not succesful in the US / actions taken by Nokia |
|---------------|--|
| 2002 | (no discussion on the U.S. market and/or actions taken) |
| 2003 | CDMA technology one focus area |
| 2004 | Launched a high performance CDMA phone 6255 and an EDGE phone 6620 for the North American market |
| 2005 | Launched first operator-tailored phones 6102 and 6234 |
| 2006 | 11 new CDMA phones, opened two research centers in the US |
| 2007 | launched 6555 together with AT&T, launched several new CDMA phones |
| 2008 | (no discussion on the U.S. market and/or actions taken) |
| 2009 | (no discussion on the U.S. market and/or actions taken) |
| 2010 | (no discussion on the U.S. market and/or actions taken) |
| 2011 | (no discussion on the U.S. market and/or actions taken) |

Appendix IV. Categories in secondary data

| | | | 1-2 | 3-4 | 5-7 | 8-10 | 11-14 | 15-18 | 19-23 | 24-33 | 34-44 | 45-47 | Total |
|----|--|---|------|-----|-----|------|-------|-------|-------|-------|-------|-------|-------|
| | Explanation category | Source number | 2002 | '03 | '04 | '05 | '06 | '07 | '08 | '09 | '10 | '11 | Total |
| 1 | Problems in operator cooperation / operator market power | 3, 7, 8, 15, 16, 18, 23, 24, 27, 28, 30, 31, 32, 33, 42, 45, B2, B3 | | 1 | 1 | 1 | | 3 | 1 | 7 | 2 | 1 | 17 |
| 2 | Nokia focused on GSM while CDMA is preferred in the U.S. | 1, 3, 9, 10, 11, 12, 13, 17, 22, 23, 28, B2 | 1 | 1 | | 2 | 3 | 1 | 2 | 2 | | | 12 |
| 3 | Symbian related problems | 29, 31, 33, 35, 39, 40, 41, 42, 44, 45 | | | | | | | | 3 | 6 | 1 | 10 |
| 4 | Lack of tailored products for operators or U.S. market | 7,11,14,19,24,27,28,34, 41,B3 | | | 1 | | 2 | | 1 | 3 | 3 | | 10 |
| 5 | Lack of clamshell phones | 5, 6, 7, 8, 11, 33* | | | 3 | 1 | 1 | | | 1 | | | 6 |
| 6 | Intense/intensified competition | 21, 23, 26, 29, 33, 37 | | | | | | | 2 | 3 | 1 | | 6 |
| 7 | Phone design does not attract American consumers | 8, 15, 34, B2 | | | | 1 | | 1 | | 1 | 1 | | 4 |
| 8 | Too few high-end models available | 26, 30, 34, 37 | | | | | | | | 2 | 2 | | 4 |
| 9 | Offering not compelling/innovat. | 16, 23, 36, 38 | | | | | | 1 | 1 | | 2 | | 4 |
| 10 | Too few models represented by operators | 10, 16, 22 | | | | 1 | | 1 | 1 | | | | 3 |
| 11 | Application development environment | 36, 41, 45 | | | | | | | | | 2 | 1 | 3 |
| 12 | Nokia phones not subsidized | 17, 34 | | | | | | 1 | | | 1 | | 2 |
| 13 | Weak presence in the market | 20 | | | 1 | | | | | | 1 | | 2 |
| 14 | Lack of focus/commitment | 6, 43 | | | 1 | | | | | 1 | | | 2 |
| 15 | Weak brand | 38 | | | | | | | | | 1 | | 1 |
| 16 | Recession | 23 | | | | | | | | | 1 | | 1 |
| 17 | Different consumption habits | 34 | | | | | | | | | 1 | | 1 |
| 18 | Organizational changes in Nokia | B2 | | | | | | | | 1 | | | 1 |
| 19 | Disputes with Qualcomm | B2 | | | | | | | | 1 | | | 1 |
| | TOTAL | | 1 | 1 | 6 | 5 | 6 | 5 | 7 | 18 | 22 | 2 | 73 |

Appendix V. Nokia's responses

| | | | 1-2 | 3-4 | 5-7 | 8-10 | 11-14 | 15-18 | 19-23 | 24-33 | 34-44 | 45-47 | |
|---|---|---|------|------|------|------|-------|-------|-------|-------|-------|-------|-----|
| | Nokia's action | Source number | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | Sum |
| 1 | Launched tailored phones for operators or U.S. market | 7, 11, 14, 16, 18, 19, 20, 22, 24, 25, 27, 46, B2, B3, AR04, AR05, AR07 | | | 2 | 1 | 2 | 3 | 3 | 4 | 1 | 1 | 17 |
| 2 | More focus on operator cooperation | 8, 14, 24, 25, 27, 28, 43, B1 | | | | 1 | 1 | | | 4 | 1 | | 7 |
| 3 | Launched new CDMA phones | 10, 13, 22, AR04, AR06, AR07 | | | 1 | 1 | 2 | 1 | 1 | | | | 6 |
| 4 | Launched clamshell phones | 7, 11 | | | 1 | | 1 | | | | | | 2 |
| 5 | Increased presence in the US | 24, AR06 | | | | | 1 | | | 1 | | | 2 |
| 6 | Adopted Windows Phone | 46, 47 | | | | | | | | | | 2 | 2 |
| 7 | Cooperation with Sanyo to produce CDMA phones | 11, 12 | | | | | 2 | | | | | | 2 |
| 8 | Promised to develop Symbian to match expectations | 35 | | | | | | | | | 1 | | 1 |
| 9 | Promised to develop Meego | 45 | | | | | | | | | | 1 | 1 |
| | TOTAL | | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 1 | 1 | 3 | 10 |