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When Handsets Became Smart

*A case study on value migration in the handset
OEM industry*

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Abstract

| | |
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| Title | When handsets became smart - A case study on value migration in the handset OEM industry |
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| Supervisors | Ph. D Candidate Fredrik Häglund, Ph. D Magnus Johansson |
| Purpose | The purpose of this thesis is to describe the value migration that has taken place inside the handset OEM industry between 2007 and 2011. Our second purpose is to see if we can create a framework that deepen the understanding on how to control the flow of value. |
| Method | A qualitative case study has been made with four different cases, representing four types of value flow. Interviews with expert analysts in the mobile industry have been conducted and secondary data has been collected and analyzed with an abductive point of view. |
| Conclusions | The main cause of the intra industry value migration is that the base of competition has shifted from product performance to flexibility, differentiation and speed which in this industry means ecosystem, brand and time-to-market. The asymmetric business models and the two-sided platforms have proven to be a cause of inter industry value migration. This is a natural cause of their nature, since resources is spent in one end and value is absorbed in the other, and if these parts operate in different industries, inter industry value migration has to happen. Our value flow framework has proven to be a useful tool to identify, measure and evaluate a value flow, regardless of the industry level it occurs on. |
| Key words | Mobile industry, handset OEM, iPhone, Android, value migration, business innovation, disruptive innovation |

Preface

For a couple of months we have studied and explored the value migration in the handset OEM industry and it has resulted in the thesis you are holding right now. It truly has been a delightful experience to research in such a dynamic and exiting industry and we can honestly say that we have learned so much.

The help we have received during this thesis needs some acknowledgement. We would like to thank our tutors, Ph. D candidate Fredrik Häglund and Ph. D Magnus Johansson for their patience, guidance and support throughout the project. We would also like to thank our interviewees, Horace Dediu, Peter Bryer and Otto Sjöberg and a special thanks to Andreas Constantinou, who has given us many interviews and giving us access to consultancy reports from VisionMobile.

Lund, May 22nd 2013

Erik Lundin & Viktor Lundqvist

Table of Contents

| | | |
|----------|--------------------------------------|-----------|
| 1 | Introduction | 1 |
| 1.1 | Background | 1 |
| 1.2 | Problem discussion | 2 |
| 1.3 | Research question..... | 4 |
| 1.4 | Purpose | 4 |
| 1.5 | Delimitations..... | 4 |
| 2 | Methodology | 6 |
| 2.1 | Value migration project | 6 |
| 2.2 | Overall approach..... | 6 |
| 2.3 | Research design..... | 7 |
| 2.3.1 | Interviews | 9 |
| 2.3.2 | Theory..... | 10 |
| 2.3.3 | Literature | 10 |
| 2.3.4 | Reliability and validity..... | 11 |
| 2.4 | Selection of cases..... | 13 |
| 3 | Theory | 15 |
| 3.1 | Value..... | 15 |
| 3.2 | Disruption theory | 16 |
| 3.2.1 | Low-end disruption | 16 |
| 3.2.2 | External shocks | 18 |
| 3.3 | Value migration..... | 18 |
| 3.4 | Strategy in the mobile industry..... | 20 |
| 3.4.1 | Business innovation | 20 |
| 3.4.2 | Platform strategy | 21 |

| | | |
|----------|--|-----------|
| 3.4.3 | Network effects..... | 22 |
| 3.4.4 | Walled Garden..... | 22 |
| 3.4.5 | Lock-in effect..... | 23 |
| 3.4.6 | Leader's dilemma..... | 23 |
| 3.4.7 | Entry barriers - Integration..... | 23 |
| 3.4.8 | Responses to disruptive strategic innovation..... | 24 |
| 3.5 | Theoretical framework..... | 25 |
| 4 | The fall of Nokia..... | 26 |
| 4.1 | Nokia's company structure | 26 |
| 4.2 | From leader to follower..... | 26 |
| 4.3 | Why did Scandinavian companies emerge as the leaders in the mobile industry? ... | 27 |
| 4.4 | Nokia in 2007..... | 28 |
| 4.5 | Nokia's smartphone operating system - Symbian..... | 29 |
| 4.6 | Nokia starts partnership with Microsoft..... | 29 |
| 4.7 | Nokia post 2011 | 31 |
| 4.8 | Nokia's technology..... | 33 |
| 4.9 | If Nokia had the technology – why not an iPhone?..... | 33 |
| 4.9.1 | Nokia's relationship with the operators..... | 34 |
| 5 | Apple's and Samsung's profit recipes | 35 |
| 5.1 | Apple..... | 35 |
| 5.1.1 | History of Apple..... | 35 |
| 5.1.2 | The iPhone..... | 37 |
| 5.1.3 | Apple post iPhone release..... | 39 |
| 5.1.4 | Apple's brand value..... | 40 |
| 5.2 | Samsung..... | 41 |
| 5.2.1 | Samsung's company structure | 41 |

| | | |
|----------|--|-----------|
| 5.2.2 | Samsung Electronics..... | 41 |
| 5.2.3 | Samsung pre Android..... | 42 |
| 5.2.4 | Samsung reacts to the iPhone release | 43 |
| 5.2.5 | Samsung post 2011 | 45 |
| 5.2.6 | The Galaxy series | 46 |
| 5.2.7 | Samsung's brand value..... | 46 |
| 6 | Google's and Amazon's subsidizations..... | 47 |
| 6.1 | Amazon's Kindle | 47 |
| 6.1.1 | What is Kindle? | 47 |
| 6.1.2 | Amazon's History..... | 48 |
| 6.1.3 | Amazon post Kindle..... | 48 |
| 6.2 | Google's Android | 50 |
| 6.2.1 | History of Google | 51 |
| 6.2.2 | Android..... | 51 |
| 6.2.3 | What has Android done to the handset OEM industry? | 52 |
| 7 | Absorption of Technology – The handset OEM industry's value capturing | 54 |
| 7.1 | The GPS industry – Use of GPS in mobile phones..... | 54 |
| 7.1.1 | Sales on GPS – Mobile vs. traditional..... | 55 |
| 7.2 | The camera industry - Market moving to camera phones..... | 55 |
| 7.2.1 | Cameras in phones..... | 56 |
| 7.2.2 | The camera industry | 57 |
| 7.2.3 | A new product segment | 58 |
| 7.3 | The computer industry | 58 |
| 7.3.1 | Change in internet usage – change for the computer industry..... | 59 |
| 7.3.2 | The developing world – smartphones instead of computers | 61 |

| | | |
|----------|-------------------------------------|-----------|
| 8 | Analysis | 62 |
| 8.1 | Value flow framework | 62 |
| 8.1.1 | Triggers | 63 |
| 8.1.2 | Directions | 63 |
| 8.1.3 | Accelerators and decelerators | 63 |
| 8.1.4 | Outcome | 64 |
| 8.2 | Nokia | 64 |
| 8.2.1 | Trigger | 64 |
| 8.2.2 | Direction | 64 |
| 8.2.3 | Accelerators & Decelerators | 65 |
| 8.2.4 | Outcome | 66 |
| 8.3 | Apple | 66 |
| 8.3.1 | Triggers | 66 |
| 8.3.2 | Direction | 67 |
| 8.3.3 | Accelerators and decelerators | 67 |
| 8.3.4 | Outcome | 68 |
| 8.4 | Samsung | 68 |
| 8.4.1 | Triggers | 68 |
| 8.4.2 | Directions | 68 |
| 8.4.3 | Accelerators and decelerators | 69 |
| 8.4.4 | Outcome | 70 |
| 8.5 | Android | 70 |
| 8.5.1 | Triggers | 70 |
| 8.5.2 | Directions | 70 |
| 8.5.3 | Accelerators and decelerators | 71 |
| 8.5.4 | Outcome | 71 |

| | | |
|-----------|---|-----------|
| 8.6 | Kindle..... | 71 |
| 8.6.1 | Triggers..... | 71 |
| 8.6.2 | Direction..... | 71 |
| 8.6.3 | Accelerators and decelerators..... | 72 |
| 8.6.4 | Outcome..... | 72 |
| 8.7 | Technology absorption..... | 72 |
| 8.7.1 | Triggers..... | 72 |
| 8.7.2 | Direction..... | 73 |
| 8.7.3 | Accelerators and decelerators..... | 73 |
| 8.7.4 | Outcomes..... | 74 |
| 8.8 | Cross-case analysis..... | 74 |
| 8.8.1 | Department's percentage of total revenue..... | 74 |
| 8.8.2 | Differentiation and competition across and between platforms..... | 74 |
| 8.8.3 | Value allocated in platforms and ecosystems..... | 75 |
| 8.8.4 | Value migration ratio..... | 75 |
| 9 | Conclusion..... | 77 |
| 9.1 | Academic contribution..... | 77 |
| 9.2 | Empirical contribution..... | 78 |
| 9.2.1 | Intra industry empirical contribution..... | 78 |
| 9.2.2 | Inter industry empirical contribution..... | 78 |
| 9.3 | Further research..... | 80 |
| 10 | References..... | 81 |
| 10.1 | Books and journals..... | 81 |
| 10.2 | Primary sources..... | 83 |
| 10.3 | Secondary sources..... | 83 |
| 11 | Appendix..... | 91 |

Definitions

- Handset industry:** The industry of handsets including the whole value chain, from component manufacturers to handset original equipment manufacturers (OEM).
- Handset OEM industry:** Contains only the handset OEMs.
- Mobile industry:** The whole industry regarding mobile telephony. Includes; infrastructure providers, network operators, handset OEM, services (IP based)/ OTT players, developer B2B ecosystem
- Samsung:** Is by definition the whole conglomerate with all companies under the Samsung brand. However, except in sections 5.2.0 and 5.2.1, when we write Samsung we refer to Samsung Electronics.
- Samsung Electronics:** A subsidiary to Samsung which among other consumer electronics produces handsets. They also have a large department that produces handset components.
- Theoretical framework:** Is the framework that is based on our theory chapter and shown on p. 25.
- Value flow framework:** Is the revised framework that has its origins in the theoretical framework but is updated after the empirics.
- Value migration framework:** Is the framework that is based on Adrian Slywotzky's theory on value migration and is used when we select cases to our case study.

1 Introduction

1.1 Background

The mobile industry is in constant change. In the beginning during the early 1980s, it was mostly marketed as a way for business men to be able to call from their cars, whereas now the business looks completely different. Global economic growth, economies of scale and technological development have made the mobile phone a massive hit, with a total user base of 5.9 billion subscriptions worldwide (Ahonen, 2012b). The mobile phone is not just a product like any other, rather it can be described as the same kind of freedom tool as the car once was. In the last couple of years it has even functioned as a tool to tear down tyranny and dictatorships during the Arabic spring. (Ericsson, 2012)

The mobile industry value chain now consists of the following five different sub industries (Ahonen, 2012b; Sharma, 2012):

- Infrastructure providers
- Network operators
- Handset OEM
- Services (IP based)/ OTT players
- Developer B2B ecosystem

This has not always been the case. The development of this industry was firstly driven by what we now call the infrastructure providers, providing everything from handsets to base stations. The pioneers were Scandinavia based Ericsson and Nokia together with American Motorola. Telecom deregulation and the increased demand on innovative technology paved the way for more entrants to the market. The existing players at the time begun to differentiate on different parts of the value chain and the structure of what we see today took form. (Ericsson, 2012)

A mobile phone consists of numerous complex and highly advanced components. This affects the whole industry, making building handsets a very complex and advanced business as well. Production, assembly, development, processing and shipping are just some of the many activities involved in constructing a mobile phone. In some cases, handset OEMs do a majority of these value chain activities “in-house”, but in most cases, the value chain is

spread out among different companies (Nomura, 2012). This is one of the reasons why this industry is so complex and why it is so hard to fully understand. Many of the consumers are also on a 12-24 month contract from an operator. The operators often subsidize handsets to cope with the large user base needed to cover heavy fixed costs in infrastructure. This is yet another example of the complexity of the industry.

During the last ten years, the appearance and design of the mobile phone has continuously changed. Throughout the years mobile phones have had different typing solutions (like QWERTY, 0-9 and T9), size and shapes. However, today it appears that only a couple of form factors have survived. To illustrate this (figure 1.1) we have sampled some of Nokia's newly launched mobile phones in 2004 respectively 2012. In 2004, Nokia offered a lot of different models; regular bar phones, slider phones, flip phones, QWERTY flip phones, gaming consoles as well as

the notoriously strange Nokia 7280. In 2012, the only form factors offered were bar phones, QWERTY phones and touch screen phones.



Figure 1.1 Nokia's mobile phone releases in 2004 and 2012

Something has clearly happened and intuitively

it seems like handset OEMs do not compete on hardware design as extensively as before, implicating that there is something else that has become more important.

1.2 Problem discussion

As we have mentioned, the mobile industry is an industry characterized by its rapid change. The constant high demand of new innovations shapes the industry and makes speed crucial. New technology has the ability to disrupt the industry and change the rules of competition.

We have chosen to examine the handset OEM industry from the year of 2007 and the reason for that is very simple. Apple's iPhone was released June 29th 2007 and that disrupted the market. Apple's iPhone is considered a disruptive innovation, meaning it severely changed the structure of the whole mobile industry after it was launched (Ahonen, 2012b, p.

92). These big changes came as a blessing for some, while others have failed in adjusting their business design in order to capture value.

Former huge player Ericsson recently ended their joint venture with Sony and has stopped producing handsets. Nokia have in five years' time decreased their mobile phone sales by 50% and have after 13 years on the throne been overtaken by Samsung as the number one mobile phone producer. At the same time as the iPhone caused trouble for the traditional handset OEMs, Google chose to release a mobile phone operating system (OS) named Android and licensed it out for free.

Moreover, the introduction of applications opened up a completely new side of the market now accounting for more than 10% of the industry revenue (Ahonen, 2012b, p. 5). Average sales price on handsets has after ten years of declining recently (2010) changed pattern and are instead increasing. Since 2009, more people have access to the internet by phones than by PCs. Clearly, it is an industry filled with action and the need for proper information and projections about the future is enormous since as a player in this business, it is extremely important to “be on your toes”. (Ahonen, 2012a)

During the last five years the boundaries of the industry have started to slowly fade away. In the 1980s, the mobile industry consisted of mobile handsets, network operators and base station and other infrastructure while today companies have started to use more asymmetric business models which have made the scope of the industry more problematic to define (Meurling & Jeans, 1994). For example, Google's main revenue source is online ads and at the same time they are present in the mobile industry with their OS. Amazon which is an online retail firm sells subsidized tablets which they use to drive users towards their retailing. Thus, in order for us to be able to examine these changes in an organized and structural manner we need a good theory that copes with this kind of issue as a starting point for our research.

We will look at these set of events from the perspective of Value Migration, a theory presented by Adrian Slywotzky. The theory is about how value is migrating from companies with outdated business designs, to companies with superior business designs who better serves the needs and priorities of consumers.

The theory stipulates that there are three phases a company can experience Value Migration in; the inflow phase where value is flowing in to the company, the stable phase where value is not going anywhere and the outflow phase where value is flowing out of the company. Moreover Value migration can occur in three different levels; on a inter industry level (where value is migrating between industries), on an intra industry level (where value is migrating between companies inside an industry) and on a inter company level (where value is migrating between departments or products inside the company). (Slywotzky, 1996)

There are already some studies on the recent change in the handset OEM industry (e.g. Cusumano, 2010a; Kenney & Pon, 2011) but they are not fully up to date and no one has connected them to the theory of Value Migration. Could Value Migration as a framework help us understand these changes?

1.3 Research question

With this background in mind, what is the reason for the rapid shift of power between the largest companies during the years of 2007-2011 in the handset OEM industry from a Value Migration point of view? What affects a value flow's direction and intensity?

1.4 Purpose

The purpose of this thesis is to explain and describe the value migration inside the handset OEM industry and apply existing theory to the cases that we are going to study. Our second purpose is to investigate if our value flow framework can generate further insights on value migration and if we can add to the existing value migration theory and thus help companies to better understand how to control the flow of value in an industry.

1.5 Delimitations

To start with we need to straight some things out regarding definitions on the terminology we use. First off, we will look at the definition of a mobile phone. We will use a definition found in “The Mobile Phone Book” by Meurling and Jeans (1994) that states that a mobile phone is a handset device using cellular network technology combined with radio technology for wireless connection. Moreover, the focus on this thesis will be on what is called “smartphones” e.g. a mobile phone which has the type of OS that allows users to install applications. This is a standard definition essentially used by all analytics and in all statistics (Ahonen, 2012b, p. 71).

Furthermore, we are only focusing on our part of the value chain, namely the handset OEM industry. When value is transferred from or to another part of the value chain, this will of course be mentioned, but our focus and starting point in every case will be from the handset OEM industry.

2 Methodology

2.1 Value migration project

We were approached by Allan T Malm, former dean of Lund University School of Economics and Management and now professor in strategy with a suggestion of topic on our master thesis. He wanted to form a group consisting of ten students working in pairs to each cover one part of the industry's value chain per pair. The idea was to analyze this industry with the theory of Value Migration with the delamination of the time span 2007-2011. The reason for the research starting in 2007 is mainly because the iPhone was released during that year and it has a big impact on the industry. Since this project started in early 2013, much of the facts and figures from 2012 were not available and thus the other end of our study was set to 2011. One of the other supervisors involved in this project was Andreas Constantinou. He is the founder and CEO of VisionMobile, an analyst company within the mobile industry and he has provided us with consultancy reports and good feedback throughout the research process.

2.2 Overall approach

Our purpose for this thesis is mainly to examine the value migration that has taken place in the handset OEM industry between the years 2007 and 2011. In order to fulfill our purpose in a satisfactory way we believe that the qualitative research method suits our thesis the most. The qualitative method (as opposed to the quantitative) emphasizes words rather than numbers, has a more loose structure and relies on rich rather than hard and reliable data which will fit our methodology (Bryman & Bell, 2003, p. 322). Our thesis has a narrow focus where it gives explanations on a set of events in a specific industry, indicating that our research is of a qualitative nature.

However, in order to get a comprehensive view of the handset OEM industry and to allocate where in the value chain profit has migrated, quantitative elements have been added to our thesis. The quantitative research only works as a base and a starting point for our qualitative and more case like research and is thus not a main feature of our thesis. We have looked at companies' annual reports and used that information to cover the profit, volume and revenue streams inside the industry.

We started this thesis with a framework that originated in different theories and we have tried to apply them on our empirical findings, thus our approach is deductive (Alvesson & Sköldbberg, 2005, p. 54). In deductive theory, the researcher starts with what is already known in a particular area and what existing theories that applies to it and then formulates a hypothesis which is tested through empirical studies. On the contrary, a thesis can have an inductive approach. The inductive approach is when the result of the researcher's empirical study becomes theory. Since our study has some elements of both the deductive and inductive reasoning, we have an abductive approach. (Bryman & Bell, 2003, pp. 23-24)

Abductive reasoning is a mix between the deductive and the inductive and in reality most research methods is done in an abductive manner. Abductive reasoning lets the researcher work from existing theory and, depending on the result, the empirical studies could be used to verify theory or to add upon existing theories. (Alvesson & Sköldbberg, 2005, p. 55)

We have done what Yin defines as a case study: “A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context when the boundaries between phenomenon and the context are not clearly evident” (Yin, 2003, p. 13). In our case, the contemporary phenomenon is the rapid value migration that has been taken place inside context, which is handset OEM industry. Since we have been looking at the most important and prominent events that have caused this value migration, we have chosen a multiple-case design.

The cases we have chosen are:

- The fall of Nokia
- Apple's and Samsung's profit recipes
- Google's and Amazon's subsidization of parts in the mobile industry
- The handset OEM industry's absorption of technology

A longer description of the cases will be found later in our paper as well as an explanation on why we have chosen these particular cases.

2.3 Research design

Yin presents some aspects and important issues to consider when choosing between a single or a multiple case design. Single case designs tend to give a more detailed view of the

“critical case” and are not as difficult to design. On the other hand, multiple cases are considered more robust since the evidence is more compelling and give a more comprehensive view. However, in order to get a compelling answer to a multiple case designed thesis, one must carefully select cases that serve a specific purpose and contribute to the research. To succeed with a multiple case design, Yin argues that a replication logic, not a sampling logic should be used when cases are selected. (Yin, 2003)

As already mentioned, we have chosen to work with a multiple-case design by trying to pick out 4-6 events that can be analyzed from a value migration point of view. The reason for us wanting at least four events is that it suits well for a theoretical replication and we can try to find two contrasting patterns (Yin, 2003, p. 47). Ideally we would have cases covering both intra industry value flow and inter industry value flow. With fewer cases it would be hard to identify similarities between the different value migration patterns and to draw cross-case conclusions. We could have chosen to have even more cases but the work load would be far too big and the amount of research that would be necessary did not suit the time frame of this thesis.

To illustrate how the research has been conducted we have used Yin's case study method model for multiple case studies (Figure 2.1). As a starting point we have the value migration theory which we have used when we selected the cases that we wanted to study.

The case studies were then conducted individually and along the process we continuously questioned if the chosen cases fitted our model. If they did not, we had to rethink and possibly modify our selection. When the individual reports were finished, we analyzed the results we got from our research with the help of our value flow framework, and hopefully we have added further insight to the research field of value migration and to the mobile industry.

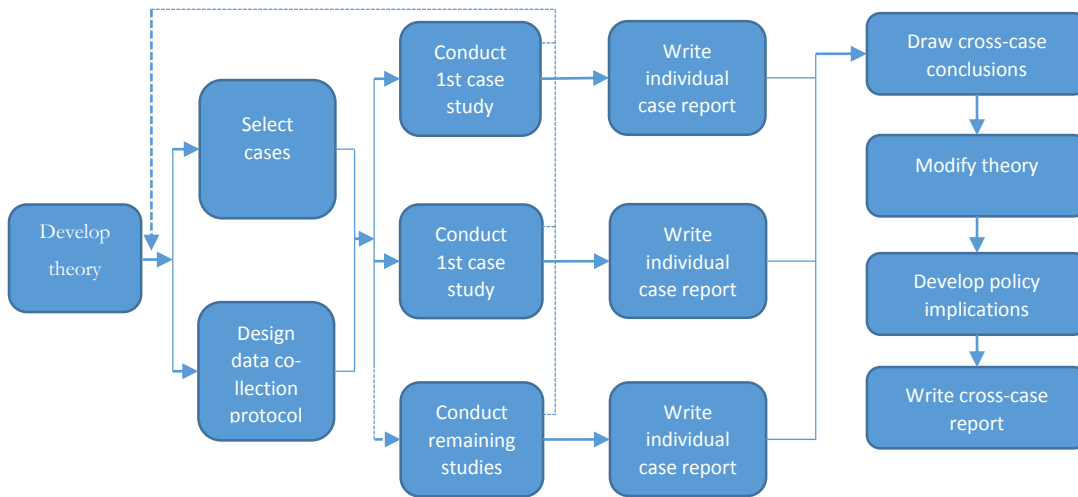


Figure 2.1 (Yin, 2003, p. 50)

2.3.1 Interviews

In order for us to add more reliability and trustworthiness to our thesis we have conducted a couple of interviews. We have tried to find persons that have been a part of the cases that we have studied and thus getting a detailed inside view of the events that we were examining. The interviewees are experts on the mobile industry and their knowledge and opinions not only gave us reliable facts but they have also helped us to decide which cases to write individual reports on. Before we conducted these interviews, we needed to decide how to structure them.

With a quantitative methodology, Bryman and Bell (2003) suggests that the interviews should be done in an unstructured or semi-structured manner. In a semi-structured interview the researcher has a relatively detailed interview guide with topics that he wants to bring up. However, it is not essential that all topics get discussed nor is it important in which order they are brought up. The unstructured interview doesn't need an interview guide, it is enough with memos containing brief notes about the theme of the interview (Bryman & Bell, 2003, p. 363). We wanted the people we interview to tell us what events in the mobile industry they thought were important so we believed the unstructured approach was the most appropriate since it let the interviewee associate freely. The unstructured interview also gave us room to ask follow-up questions on things we believed sounded interesting as opposed to the semi-structured that could constraint our ability to really listen to the interviewee and extract as much as possible out of him.

During our research, we have made the following four interviews:

- **Andreas Constantinou** – One of the supervisors of the value migration project and mobile industry expert. Founder of the analyst firm Visionmobile. Interviewed through Skype on March 21, April 18 and May 17.
- **Peter Bryer** – Former Nokia employee. Worked for 16 years at Nokia and during the last seven years in the mobile foresighting group, analyzing future trends and technology. Today he runs a blog about the mobile industry. Interviewed in person on March 26.
- **Horace Dediu** – Former Nokia employee and Apple expert. Worked at Nokia from 2001-2009 doing strategy work and business development. Founded the analyst firm Asymco in 2010 and writes occasionally for the *Harvard Business review* blog. Interviewed through Skype on April 17.
- **Otto Sjöberg** – Former editor-in-chief on Swedish newspaper *Expressen*. Now runs a consultancy firm helping companies develop their presence in the mobile/internet sphere. Made *www.aftonbladet.se* big at his time at Swedish newspaper *Aftonbladet*. Interviewed in person on April 12.

2.3.2 Theory

As mentioned earlier, our value migration framework is built upon Slywotsky's (1996) theory. We have also studied Clayton Christensen's theories regarding business model innovation and especially his theories on surviving disruption and over served markets. Moreover, the mobile industry has during recent years developed into a market where two platforms dominate, Apple's iOS and Google's Android. Hence we have studied Cusumano's theories on platforms in the technological setting and how network externalities, Lock-in effects and different platform strategies have affected the handset OEM industry.

2.3.3 Literature

The mobile industry has been growing fast during the last 20 years and the subject of mobile telecom has been researched on a lot. For this thesis there is a very good existing academic base which we have used when we examined our cases. There are existing theories on platforms, network effects and business innovation with corresponding articles regarding the mobile telecom industry but no literature has the value migration as its point of view. There

are also theories without any clear connection to the mobile industry that can shed new light on our topic when put in this context. Our selection of theories have been from the field of strategy. Within this field, the focus has lied on what the strategy field defines as value and change. Within these definitions, we have been searching for topics like value migration and disruption (disruptive innovation), illustrated in figure 2.2.

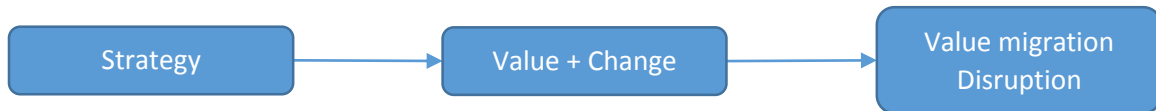


Figure 2.2 Value migration within the field of strategy

Furthermore we have had access to a lot of consultancy reports from renowned firms in the industry such as Visionmobile, Nomura and Asymco. These have first and foremost provided us with figures and numbers that are too hard for us to otherwise get as a primary source but also with comprehensive analysis of different parts of the industry. Important figures such as component specific profit margins, market shares, average sale prices and sales by different factors have been gathered from the above mentioned consultancy firms.

2.3.4 Reliability and validity

In order to improve a thesis' quality there are four well-used tests that we have used; construct validity, internal validity, external validity and reliability (Bryman & Bell, 2003, p. 306; Yin, 2003, p. 35).

Construct validity is, according to Yin, the most problematic test in case study research and that corresponds with our opinion as well. When a multiple case study is based on events of change (such as our) the selection of events become very crucial. The change in revenue level inside the handset OEM industry can probably be explained by hundreds of variables and it is our job to, with some kind of logic, choose a specific set of cases. Yin presents two steps that must be covered in order to achieve construct validity (Yin, 2003, p. 35):

1. Select the specific types of changes that are to be studied (and relate them to the original objectives of the study) and
2. Demonstrate that the selected measures of these changes do indeed reflect the specific types of change that have been selected.

The changes we would like to study is what Slywotsky's defines as value migration. Value migration is theory of how value migrates from companies (or industries consisting of

companies) that have business designs poorly adjusted to the consumers' needs and to companies with business designs that in a superior way fulfills the consumers' needs (Slywotzky, 1996).

To cover the second step we have used a framework based on Value Migration theory (Table 2.1). According to Slywotzky in his book Value Migration and as described before, Value Migration can occur on three different levels; inter industry, intra industry and intra company and in three different phases; inflowing, outflowing or stable (Slywotzky, 1996). From this, we have constructed a framework which we have been using, partly when we select our cases and partly in our cross-case discussion.

| Handset OEM industry | Value flowing in | Stable | Value flowing out |
|-----------------------------|-------------------------|---------------|--------------------------|
| Inter industry | | | |
| Intra industry | | | |
| Intra company | | | |

Table 2.1 Three different phases on three different levels (Slywotzky, 1996)

To further increase the thesis' construct validity we have used multiple sources of evidence which makes our results more robust and we have also tried to establish a clear chain of evidence from our case study question to the finished report. Finally we have also had our key interviewees (with regard for their lack of time) review our case study before hand-in.

According to Yin, internal reliability is only a concern in causal studies, not in exploratory cases (such as ours). External validity is the ability to generalize the case result (Bryman & Bell, 2003, p. 306). Single-case studies are often criticized for lacking external validity and that's one of the reasons we have chosen a multi-case study (Yin, 2003). To further improve the external validity of our research we have, as mentioned earlier, used the replication logic. Finally, the reliability test ensures that if the case study should be remade with another investigator, he would get the same result. The basics of maintaining a high reliability is to minimize bias and to make the work process as operational as possible.

2.4 Selection of cases

The chosen cases are to illustrate big movements and change in the handset OEM industry. With this in mind and with help of the value migration framework, we have chosen the following four cases:

- The fall of Nokia
- Apple's and Samsung's profit recipes
- Google's and Amazon's subsidization of parts in the mobile industry
- The handset OEM industry's absorption of technology

As our framework consists of two axis, one measuring the direction of the value flow and the other one showing where this flow is taking place, we quickly realized we wanted to have four different cases (Table 2.2). Two of the cases being inside the industry, where value has flown in (Samsung and Apple) and one where value has flown out (Nokia). Apart from that we also wanted to look outside the industry and see how the value has flown out from the industry (subsidization) and in to the industry (absorbing technology).

| Handset OEM industry | Value flowing in | Value flowing out |
|----------------------|------------------|-------------------|
| Inter industry | 3 | 4 |
| Intra industry | 2 | 1 |

Table 2.2 Revised value migration framework

We have intentionally skipped the “stable” flow as it is harder to look at changes in that category. Also, finding value flows in the intra company would require a much heavier work load and does not fit in the given time frame of this project. We have also been forced to not study certain cases since we only have room for the most prominent.

In quadrant one, we could have studied other handsets that have suffered the same drop in market share and in profit margins (i.e. Motorola, Sony Ericsson and BlackBerry) but since we want to narrow down our case studies as much as possible we chose the company that has seen the worst fall in both market share and profit margins, Nokia. In 2007, Nokia was the largest Handset OEM and captured around two thirds of all profit made in the industry and today they are making net losses and have not managed to capture much market share in the emerging smartphone market. Nokia also contrasts the company chosen in quadrant two

(Apple) in a good way since their respective rise and fall have been mirrored images of each other.

Hence we chose Apple as one company in the second quadrant. Apple entered the mobile phone industry as late as June of 2007 and has since managed to capture around 20% of the smartphone market share and over 70% of the profit made in the handset OEM industry. When we further studied the industry profit share we saw that there was only one other company making a profit and it was Samsung. Since there were only two profitable companies it seemed interesting to research whether they shared the same profit recipe or not and how they have managed to stay profitable when no other company has.

Regarding the third quadrant, the only distinct flow of value we could identify was the flow from other high-tech industries. The mobile phone has since the early 00s integrated components and functions from other industries such as the camera, GPS-navigation, sound recording, portable speakers etc. and we have researched how it has impacted the handset OEM industry.

Finally, in quadrant four, we saw two possible studies that we could conduct. One was to study the trend of subsidization, where companies due to different reasons have chosen to subsidize parts of the mobile handset (such as the OS and the hardware) in order to capture value. The other study was to research the increasing power of the Electronics Manufacturing Services (EMS) which is the companies that provides the handset OEMs with the handsets. Since much of the assembly and components manufacturing is being outsourced, value is moving backwards in the value chain and is thus value is migrating out of the handset OEM industry. However, after some initial research we came to the conclusion that the EMS study would require much more research than we initially estimated but the subsidization research on the other hand felt reasonable in size and felt more adequate to our research due to the rising importance of platforms (that is being subsidized). The latter case also proves that hardware as a product is being more and more commoditized which is one point we have tried to emphasize.

3 Theory

Value migration has not only been covered by Slywotzky (1996), instead there are other studies close to his within the same field of research. Other studies (e.g. Amit & Zott, 2012; Bowman & Ambrosini, 2000; Christensen & Wessel, 2012; Katz & Shapiro, 1985) have touched upon value migration. However, their main focus have been on other topics, e.g. why value migration occurs and how to defend yourself from value outflow etc. Together, the authors of these theories introduce similar ideas, even though the terminology could differ.

3.1 Value

The term “Value” in strategy literature is pretty broad, as it includes both hard measurable value (e.g. profit, revenue, sales) and harder to measure, soft value (e.g. talent, resources, customers) (Slywotzky, 1996, p. 50). Slywotzky (1996) estimates companies' value with the financial market as a point of view, taking the market cap and the stock value into consideration. Christensen (2003) on the other hand has the customer and the value proposition that the seller offer as his point of view when he measures value.

Bowman and Ambrosini (2000) divides value into two sub-categories; perceived use value and exchange value. The perceived user value is what a customer is willing to pay for a product and thus, the perceived user value is biased and based on how the customer value different traits of a product as well as the customer's awareness of competing products. The exchange value is the actual amount paid by the customer for the product. Except in the rare case when the customer buys a product at the exact price of the perceived user value, the exchange value will be lower than the perceived user value (since a customer will not buy a product where the actual price is higher than the perceived value). The difference between exchange value and perceived value is the consumer surplus. (Bowman & Ambrosini, 2000)

The consumer surplus is important for companies when trying to control the customer's behavior. The consumer surplus is what consumers refers to as “value for money” and the consumer will always buy the product with the highest consumer surplus. Consequentially companies need, in order to be successful, try to keep the exchange value as low as possible and/or keep the perceived value as high as possible. (Bowman & Ambrosini, 2000)

The easiest definition and the way it is used in this thesis is when the term of value is something that gives the company a competitive advantage. Everything from profits to market share can fit under that definition and it also takes consumer surplus into consideration.

3.2 Disruption theory

3.2.1 Low-end disruption

Clayton Christensen forms a theory on disruption and how a disruption can change the industry in its structure. He argues that industries evolve in certain patterns or cycles depending on whether or not the product the industry is producing is considered good-enough for the general consumer. He exemplifies this by going through the evolution of computers from the days of mainframes to the PC. When the computer industry consisted of big mainframe computers, the product was not considered good enough by the main-stream market. During these years, there was a tight connection between innovation and competitive advantage, meaning that the ones that were making the best computers were the ones that were making the most money. Competition was driven by product performance. In able to stay on the frontier of innovation, companies had to be integrated. As every single component had to be custom made in order to maximize its performance, there was a big interdependency between both the departments that made these components and the components themselves. This was a necessity if the company wanted to keep on making better and better products, as the market was demanding them to do. In order to cope with this interdependency, companies had to be integrated so that people and departments could communicate more efficiently than going through the open market. (Christensen et al., 2001; Christensen & Wessel, 2012)

From not good-enough to good-enough

As the market matures, the product becomes better and better and soon it has reached what the main-stream market considers is good-enough. The demand is then shifted from wanting the best product (innovations on the frontier of what is possible) to differentiation, which means time, speed and flexibility. This shift is a natural adjustment from the companies' side to, when the market has reached maturity, focus on niche segments. The core of

competition has thus shifted from the basis of product performance to the basis of convenience, customization, price and flexibility. (Christensen et al., 2001; Christensen & Wessel, 2012)

As a consequence of the shift in focus, former fully integrated companies tend to over serve the market by keep on doing what made them rich in the first place. The needed adjustment from making products that compete on its technological performance to making products that compete on other factors is hard to achieve quickly enough. Another explanation is that the search for the high margins they are used to draws them to a market so small that they forget about the main-stream consumers. (Christensen et al., 2001; Christensen & Wessel, 2012)

The most demanding customers are often the most profitable ones, and by serving them, companies can regain high margins and profits, even though volumes in this segment is smaller. When focus has shifted, the low margin activities are no longer so desirable, and companies tend to sell these or outsource these to new entrants of the industry. Often, they can undertake this segment with higher profitability by what Christensen calls a disruptive innovation, meaning a technological or business model innovation that better serves the customer's needs. (Christensen et al., 2001; Christensen & Wessel, 2012)

“Those who control the interdependent links in a value chain capture the most profit”

(Christensen et al. 2001, p. 77)

| | Not good-enough | Good-enough |
|------------------------------|------------------------|-------------------------------------|
| Money makers | Integrated companies | Suppliers, new entrants |
| Market demand (focus) | Frontier of innovation | Speed, flexibility, differentiation |
| Industry drivers | Technology innovation | Business model innovation |

Table 3.1 Summary of the good-enough status' effect on the industry (Christensen et al., 2001)

Modularity

This evolvement also has to do with the modularity of the product. As it has reached a good-enough state, the necessary components can be more or less standardized which opens up the market for suppliers and new entrants on the low end segment. Disruptive innovation is hence the innovation, technological or business model orientated, that results in a product

that better serves the customers' needs. It is launched when a product has reached good enough status, much because it cannot be launched earlier when the product is not modular yet. (Christensen et al., 2001; Christensen & Wessel, 2012)

Christensen describes this process in this quote: *“Product performance almost always improves beyond the needs of the general consumer, as companies stretch to meet the needs of the most demanding (and most profitable) customers.”* (Christensen et al., 2001, p. 74)

Dediu (2013d) argues that the vulnerability for disruption is much caused by the incentives within the organization:

“Market conditions changes because disruption happens. Disruption happens because products over serve. Products over serve because the incentives are to make them better. The incentives are like they are because engineers and managers are rewarded for it. You can go on with this chain of causality all the way down to that basic question why you do what you do. It leads all the way to the fact that value change and therefore has to change. It is not a question of when it happens because it always happens.”

To summarize Christensen's ideas he gives a quote of the overall lesson he is teaching us: *“Don't outsource the thing that's going to make lots of money next”* (Christensen et al., 2001, p. 74)

3.2.2 External shocks

Another reason that might initiate a value migration is what Slywotzky (1996) calls external events (or shocks). External events could be legislation (e.g. trade restriction), fast changes in inflation or political events (e.g. election or war) and they can affect customer priorities and business designs' value and profitability. This is events that is hard to predict but it is nonetheless important to be aware of the risk of external shocks. (Slywotzky, 1996, pp. 59-60)

3.3 Value migration

Value migration was made famous by Slywotzky in his book named Value migration, published in 1996. It is a theory describing how value migrates from companies unable to adjust their business designs when the industry it is operating in is undergoing structural changes (a constantly ongoing thing, he argues) (Slywotzky, 1996). Slywotzky defines a business design with the following quote: *“A business design is the totality of how a company selects*

its customers, defines and differentiates its offerings, defines the tasks it will perform itself and those it will outsource, configures its resources, goes to market, creates utility for customers, and captures profit"

(Slywotzky, 1996, p. 5).

The theory is focusing a lot on business designs and he presents a way of grading them in order to further measure the business designs impact on value in and outflow. The grading is measured by a ratio, consisting of the two variables Market value and revenue. By dividing Market value by revenue you will get a relative number (size wise), telling us the markets valuing of the business design. Market value is according to Slywotzky a measure of the power of a business design to create and capture value. (Slywotzky, 1996)

When dealing with multi business design companies where valuation and revenue of just one department (business design) is hard to find, Slywotzky suggests that you should "follow the customers", meaning that figures like sales (of a specific entity if that entity represents a unique business design) or user base could be of importance. (Slywotzky, 1996)

Slywotzky then presents the three different types of phases a business design (company) can be categorized in. They are named after the direction of the value flow, meaning the inflow phase of value, the outflow phase of value and the stable phase, where value is not going anywhere. (Slywotzky, 1996, p. 45)

The inflow phase is characterized by limited competition, high growth, and high profitability. In this phase, a company absorbs value from other parts of the industry (or another industry, if the business design is changed in that direction). It can achieve this because its business design is better in meeting customers needs and priorities. Companies in this phase usually have a market value/revenue ration of >2.0 . (Slywotzky, 1996, pp. 46-50)

The stable phase is characterized by competitive stability, stable market shares and stable margins. In this phase, companies could experience value migration (both inflow and outflow) but the net effect should be close to zero. Companies in this phase usually have a market value/revenue ratio of $0.8-2.0$. (Slywotzky, 1996)

The outflow phase is characterized by competitive intensity, declining sales and low profits. In this phase, value is migrating out from the company to other companies within the industry or to another industry that have business designs that better meet the needs and

priorities of costumers. Companies in this phase usually have a market value/revenue ratio of <0.8 . (Slywotzky, 1996)

The value flows, as mentioned earlier, can be between different industries, within an industry, and within a company (where value is migrating between different departments/ business designs).

3.4 Strategy in the mobile industry

3.4.1 Business innovation

In a market with a high level of competition, product differentiation become harder and harder over time. The reason for that is basically that you can only invent the wheel a given number of times. On such a market, what should companies do to create value? Instead of innovate products and focus on research and development, companies should start to reinvent their business model.

By reinventing the business model, companies can create market space by attracting customers in a different way, but with the same product. One of the most famous business innovation story is when apple introduced iTunes in combination with their already existing product, the iPod. By doing something that nobody else had done in the digital music player market, Apple created a blue ocean and profited massively from it. Although there were a lot of equally good mp3-players on the market, Apple managed to capture most of the profit and their market capitalization increased from 1 to 150 billion dollars in just four years. (Johnson, Christensen, & Kagermann, 2008, p. 51)

Johnson et al. (2008) explains what components a business model exist of. The far most import one is the customer value proposition (CVP). The CVP is the solution you present to your customers which in combination with a low price is good for a company's competitiveness. In order to have a successful business model, a company also need to make sure that they create value for their shareholders and provides a firm cash flow. By having a good profit model that can be assured. The two final components which a company needs to consider is their key resources (e.g. people, technology, products) and key processes (e.g. lean production or a unique operational model). (Johnson et al., 2008)

Business innovation can occur by doing several strategic moves. Amit & Zott (2012) have identified three different ways a company can innovate their business. Adding novel activities, which is much what Apple did when they incorporated iTunes in the digital music player market. Linking activities in novel ways, which is when structure innovation is central. And last by changing one or more parties that perform any of the activities, which is more of a governance focused rearrangement. (Amit & Zott, 2012, p. 44)

3.4.2 Platform strategy

Platform is a fairly new expression and has not been a subject of research for long. Originally platform was used as a “base of common components around which a company might build a series of related products” (Cusumano, 2010b, p. 32). These are what Cusumano (2010b) refers to as “product platforms”. However, during the late 1990s, researchers started to pay interest at another type of platform that had emerged. In the IT industry, industrywide platforms became increasingly popular like Microsoft with the PC and the browser with internet. Cusumano and Gawer (2002) came up with a definition in how to distinguish between the two platform types. They argued for two denominators that defined the platform as industrywide; the platform was provided as an inter company system and the company providing the platform had a clear strategy in how to make the platform industrywide. In today's mobile environment, platforms with its surrounding products and services are commonly referred to as ecosystems. (Cusumano & Gawer, 2002)

The two-sided platform

An important insight is that a lot of platform industries tend to be two-sided. By two-sided Cusumano (2010b) mean that the industry has two distinct groups that provides each other with products and services, through the platform. A common strategy in the two-sided network is that one “side” of the ecosystem gets subsidized or given away. Some reoccurring examples from the literature is windows which give away their browser but charge for the server and Adobe which doesn't charge for the reading software (Acrobat reader) but charge for the editing tool (Acrobat professional) (Cusumano, 2010b, p. 34; Parker & Alstyne, 2005, p. 1495). In many industries, such as streaming and advertising, the content consumers is the ones getting subsidized. However, in for example the multiplayer game industry, the consumers (players) are charged a fee to enter the network while the content developers get subsidized if they join the network. Parket and Alstyne (2005) have tried to

explain how companies choose which “side” of the network to subsidize and they come to the conclusion that it largely depends on “cross-price elasticities and the relative size of the two-sided network effects” (Parker & Alstyne, 2005, p. 1496). Another important feature of a successful platform is its network effects.

3.4.3 Network effects

Network effects are “feedback loops” that can grow at geometrically increasing rates if people and companies start to pay interest in the platform. There are two types of network effects, direct and indirect (Katz & Shapiro, 1985). A direct network effect is when an increase in usage of the platform results in an equally big increase in the platform value for other users. An example of a direct network effect could be an increase in mobile phone subscribers on a new generation of mobile technology. The network's value increases according to Metcalfe's law which stipulates that the value of a network increases with the square root of the number of users (Webb, 2006, p. 20). Thus, as the network's user base increases, the network becomes more valuable (e.g. more people to call). Indirect network effects are an increase in usage of something connected to the platform that also increases the value of the platform i.e. an increase in DVDs has a positive indirect network effect on the DVD-player platform. (Cusumano, 2010b)

These network effects, both direct and indirect, makes it possible for platforms to grow at immense speed. This dynamic and fast paced growth is what expands the ecosystem that connects external actors (Cusumano uses the word “complementors”) and their innovative capabilities to the platform which, in turn, draws more attention to the platform and the growth increases exponentially (Cusumano, 2011, p. 21). The awareness of network effects and its benefits forces the customers to form expectations regarding the size and potential of competing networks. Thus, the benefits of an economy of scale will vary with customers' expectations on the competing networks (Katz & Shapiro, 1985, p. 425).

3.4.4 Walled Garden

Mehra (2011) describes walled garden as a term that “typically refers to restrictions on user access or abilities that are, in some way, limited” (Mehra, 2011, p. 894). The “garden” is a network, a platform or something that enables user activity which is restricted with the “walls”. The “walls” of the garden does not necessarily need to be absolute but the entry to

the platform should be restricted. Another distinction of a walled garden is that it is difficult to for a customer inside the walled garden to access content outside the walled garden and vice versa. (Mehra, 2011)

3.4.5 Lock-in effect

Not only does the platform network externalities draw new users, it could also possibly create a customer lock-in. Customer lock-in is when the possibility for the user of the platform to switch to another platform gets decreased by high switching costs or other market barriers. An important aspect of the lock-in effect is that it does not necessarily have to be the value creating “part” of the platform where the lock-in occur. Google, for example, lock-in their customers in their OS (Android) and native applications (Gmail, maps, etc.). However, they capture value in their online services where they sell ads and other advertising solutions. This means that if, for example, a customer already has an iMac and Apple TV, he or she is probably going to prefer an iPhone because of the convenience of having as few different platforms as possible. If the customer bought an Android based phone, he or she would have to re-buy applications that already existed on its iMac and syncing e-mail, problems with Apple TV streaming and other compatibility issues would occur. (Kenney & Pon, 2011)

3.4.6 Leader's dilemma

One danger that platform leaders faces when their platform has settled is change. Since platform often (especially in the IT industry) are built on innovation and new technology, which is continuously evolving, leaders of the platform might be forced to adapt to a platform of a competitor. This was the case for Nokia which had to abandon their OS Symbian and instead adopt Windows' OS. (Cusumano, 2011)

3.4.7 Entry barriers - Integration

As earlier mentioned, companies need to be integrated when a product is no yet good-enough. This means that the entry barriers for such an industry are higher than when the industry has matured. It is almost impossible for a supplier to survive if all their customers require custom made components, with no scale of economies to deal with asset intensive production. (Christensen et al., 2001; Christensen & Wessel, 2012)

Furthermore, Christensen has composed a set of barriers to help companies and management to understand how vulnerable a business model is for disruption. (Christensen & Wessel, 2012, p. 60)

- 1) The momentum barrier (customers are used to the status quo)
- 2) The tech-implementation barrier (which could be overcome using existing technology)
- 3) The ecosystem barrier (which would require a change in the business environment to overcome)
- 4) The new-technologies barrier (the technology needed to change the competitive landscape does not yet exist)
- 5) The business model barrier (the disrupter would have to adopt your cost structure)

These are all barriers that a disrupter must overcome in order to disrupt the industry.

3.4.8 Responses to disruptive strategic innovation

Charitou and Markides (2003) uses the term disruptive strategic innovation, referring to a market approach that is both different from and in conflict with the traditional way. This approach emphasize different product or service attributes and just like Christensen, they argue that the disruption start out as small and low-margin businesses and then improve over time. Eventually they are able to deliver performance that is good enough in the old attributes and superior in the new ones. Existing and new customers embrace the strategic disruptive innovation and it receives increased attention from media and established players. The focus of the study is that eventually, the established players have to respond to the new threat in some way. *“At this stage, established companies confront an unavoidable fact: The new ways of playing the game are in conflict with the established ways”* (Charitou & Markides, 2003, p. 57). They argue that there is a trade-off for companies when they decide on their strategy on responding. *“A company that tries to compete in both positions simultaneously risks degrading the value of its existing activities and will experience major inefficiencies”* (Charitou & Markides, 2003, p. 57).

They have identified five possible ways to respond to disruptive strategic innovation (Charitou & Markides, 2003, pp. 57-62):

1. Focus on and invest in the traditional business
2. Ignore the innovation – It's not your business
3. Attack back – disrupt the disruption
4. Adopt the innovation by playing both games at once
5. Embrace the innovation completely and scale it up

3.5 Theoretical framework

We have tried to extend Slywotzky's value migration theory by creating a framework that includes the catalyst of value migration as well as a set of parameters affecting the size and impact of the flow of value. This extension of the existing value migration theory is derived from other researcher's findings in the subject within the field of business strategy. We will later during the analysis apply this framework to the empirical results of our case studies.

In order for value migration to occur, some kind of disruption must initiate it and therefore we have used disruption as a starting point in our framework. In turn, the value flow's magnitude is determined by the strategy of the company that it affects. In some cases, the company's strategy could be to create a disruption, but taking it one step further, their true goal is to absorb value, with the strategic disruption as a tool. The framework merge both the disruption as well as the strategy part of value migration which will give a broader and clearer overview of the change in focus. With this framework we hope that we can gain a better understanding of value migration and how it affects companies and industries.

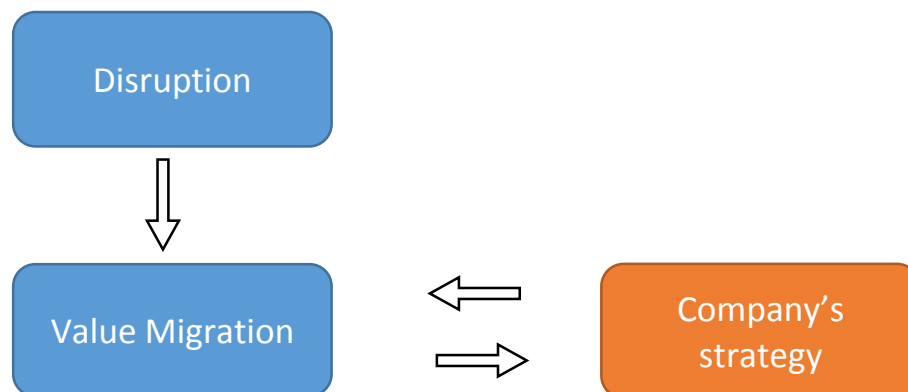


Figure 3.1 Theoretical framework on value migration

4 The fall of Nokia

4.1 Nokia's company structure

Nokia is divided into three business areas; devices and services, location and commerce and Nokia Siemens networks. Their mobile telephone business is included in devices and services which in turn is divided into smart devices and mobile phones. Smart devices focuses on smartphones and mobile phones consists of their feature phones as well as spare parts, related cost of sales and operating expenses. Nokia is listed on OMX and NYSE.

(Nokia 2012 annual report)

4.2 From leader to follower

When we look back at Nokia's position in 2007 and compare it to Nokia's position in 2011 we can see that much has changed. Nokia, what you can describe as a traditional handset OEM, was 2007 the leading company in the industry and it had held that position the last decade (Steinbock, 2010). It was dominating the global market, and compared to its competitor their geographical presence was remarkable. With a home market consisting of Finland with its 5.3 million population, the rest of the world accounted for 99% of the company's sales (Steinbock, 2010, p. 10). The net sales on phones and services were 2007 37 billion EUR and 2011 it had shrunken to 23 billion EUR (Nokia annual reports). In 2012, it had shrunken even more (15 billion EUR) and this year the phones and services department of Nokia was making a loss. To illustrate the decline in sales of Nokia, and to show how big Devices & Services' part has accounted for in the total sales, we have made this graph (figure 4.1). There are two clear trends here; one is that both revenue and profit has declined since 2007 and the other is that Devices & Services as a part of Nokia's total revenue has decreased.

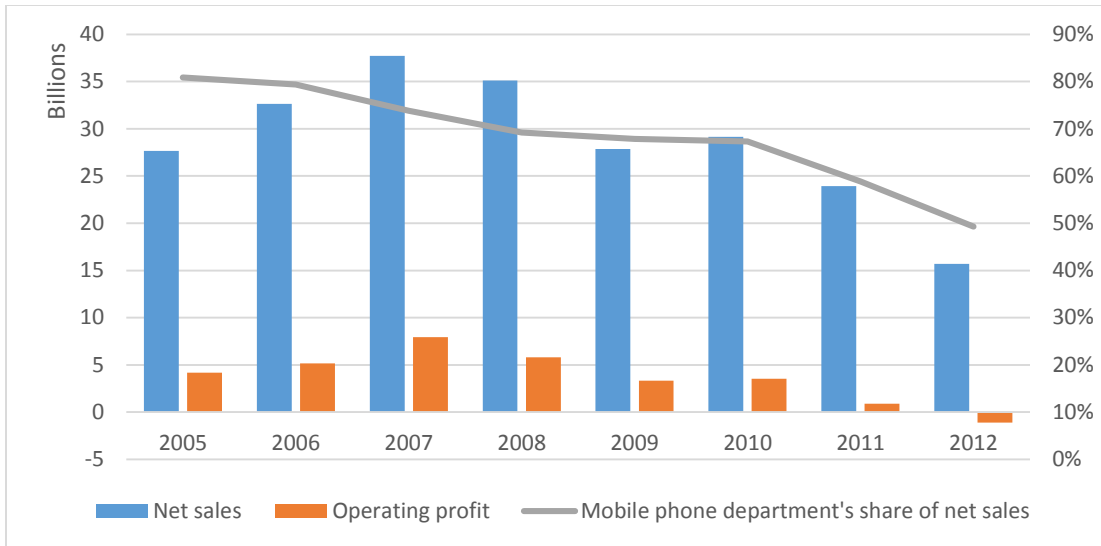


Figure 4.1 Devices & Services' net sales and operating profit (Nokia Annual Reports)

Other traditional phone makers like SonyEricsson and Motorola have also struggled a lot during the years 2007-2011. As the handset OEM industry actually has grown during these years, other companies must have captured new market shares (Ahonen, 2010; Ahonen, 2012b). The market has not decreased and decreased ASPs are not the explanation. According to Visionmobile, the major mistake that Nokia has done is to make both their components and OS modular. Since they no longer have a unique and hard to imitate feature, they will no longer stay competitive (Visionmobile, 2012).

4.3 Why did Scandinavian companies emerge as the leaders in the mobile industry?

Nokia was founded in 1865 in Finland and was until the 1970s mainly a forestry, rubber and cable company. During the 1970s and 1980s Nokia started its transformation towards consumer electronics and in 1987, Nokia was one of the top TV manufacturers in Europe (Nokia n.d.; Steinbock, 2010, p. 1). The mobile phone market was very country specific during the 1980s, however, one of the big reasons for the success of Nokia was that the Scandinavian countries together managed to create the first 1G network with international roaming (Giachetti & Marchi, 2010, p. 1129).

One of the reasons that it was developed in Scandinavia was because the Scandinavian countries had a long tradition of free trade and cooperation and when the mobile technology

emerged during the late 1960s, the Scandinavian nations started a committee to enhance the development of cellular mobile networks (Ericsson, 2012). The committee was named the Nordic Mobile Telephone group (NMT) and consisted of representatives from Denmark, Finland, Iceland, Norway and Sweden (Meurling & Jeans, 1994, p. 45). NMT named the system they created with the same name, NMT, and it was launched the 1st of September 1981, in Saudi Arabia (Meurling & Jeans, 1994). The reason that it was launched first in Saudi Arabia and not in Scandinavia (where it was launched exactly one month later) was that Ericsson sold their telecom solutions to the kingdom of Saudi Arabia, and a cellular phone system was included in the deal.

Scandinavia was in the forefront of innovation and it was no coincidence that the first GSM (2G) call was made in Finland on a Nokia made network (Elisa n.d.). Both Ericsson and Nokia pioneered in GSM technology and during the 1990s they used the success of the Nordic cellular industry and expanded globally. Nokia lead the way and because of their ability to rapidly response to changes in both technology and customer preferences, Nokia was number one in handsets and second in infrastructure by the year 1998. (Giachetti & Marchi, 2010, p. 1132; Steinbock, 2010, p. 32)

4.4 Nokia in 2007

In 2007, Nokia held the pole position of all handset OEMs. They had the largest market share and the highest operating profits (Phone Arena, 2011). In Q4 2007, they were even bigger than their three biggest competitors (SonyEricsson, Samsung and Motorola) combined, almost reaching a market share of 40% (O'Brien, 2007). At the time, smartphones were a very small part of the total handset market and a vast majority of Nokia's profit came from feature phones (Ahonen, 2010). Nokia was very successful in the emerging markets and 56% of the sales came from Middle-East & Africa, China, Asia Pacific and Latin America. A minority of the sales, 44% came from Europe and North America (Nokia, 2007). Given the market trends at the time, the emerging markets were where the growth were to happen (Dediu, 2013d).

If we speak in terms of relative technological skills and “know how”, we can take a look on Nokia's R&D spending and compare it to their competitors. During 2007, Nokia spent 5 647 000 000 EUR (Nokia, 2007) compared to Samsung's 4 745 000 000 EUR (Samsung

Electronics, 2007), SonyEricsson's 1 173 000 000 EUR (Sony Ericsson, 2007) and Motorola's 3 188 000 000 EUR (Motorola, 2007). Not all of the R&D spending of the companies were dedicated to the production of handsets but it can still give you a hint of their capability in terms of innovation and product development. In nominal terms, Nokia spent the most money on R&D than any of their closest competitors. To summarize, you could definitely say that Nokia held a strong position in the mobile handset market 2007.

4.5 Nokia's smartphone operating system - Symbian

Symbian was the OS Nokia mainly used during 2007-2011. Until late 2008, Nokia owned Symbian together with other players in the mobile industry such as Ericsson, SonyEricsson and Samsung (West & Wood, 2008) but in December 2008, Nokia decided to acquire the whole company (Virki, 2008). Nokia is the handset OEM who has had the tightest connection to Symbian even though both Samsung, Motorola and SonyEricsson have been using it on several of their devices.

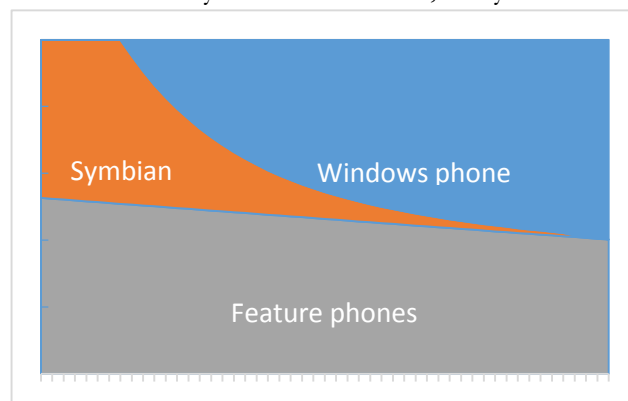


Figure 4.2 Illustration of Nokia's OS switching strategy

Nokia's biggest hit with Symbian was the S60 platform that was the OS for more than 180 million of their devices (Nokia, 2008). In 2009 Symbian's market share was 40% of all smartphone sales. The close partnership with Nokia as a full owner did not last very long and both SonyEricsson and Samsung decided to drop and stop producing Symbian phones in late 2010 (Samsung Electronics, 2010; Sony Ericsson, 2010). Three years after the 40% figure, that number had shrunken to 1% (Business Insider, 2013b). Nokia announced on 11 February that it would use Microsoft's Windows Phone as their primary software instead of Symbian. The slide above was showed to illustrate how Windows Phone would phase out Symbian as the primary software.

4.6 Nokia starts partnership with Microsoft

As the Symbian ecosystem with OVI store and the other services surrounding it started to decrease in popularity, Nokia realized that they needed to reorganize their business. Nokia was still the largest producer of mobile phones and their worldwide market share was quite stable at around 30% but their smartphone market share was on a steady decline dropping

from 60% in 2005 to around 30% in 2010 (Ahonen, 2010). At the same time, Microsoft's revenue was being threatened by other platforms from especially Apple's OSX. As more and more iPhone and iPad users choose an OSX instead of a Windows computer as their next purchase, Microsoft suffered from decreasing licensing revenues. Moreover, the increase in tablet sales and cloud-based document services meant that less office licenses were sold too (Vakulenko, 2012).

On September 21st 2010 the former Microsoft's head of the business division, Stephen Elop, was appointed as the new CEO of Nokia and 17 months later, Nokia announced a “broad strategic partnership” with Microsoft (Nokia, 2010; Nokia, 2011b). How much Elop's former connection to Microsoft impacted the decision to co-operate is unclear. The partnership meant that Nokia would make Windows phones including Microsoft's services (e.g. the search engine Bing and the advertising service adCenter) and Nokia would merge their mapping service with Microsoft's (Nokia, 2011b). In excess of the software sharing Microsoft were to make quarterly “platform support” payments of \$250 million to Nokia. This was according to Nokia supposed to just slightly exceed the licensing fees that they would have to pay for Microsoft's OS (Nokia, 2012). The announcement of a cooperation between Microsoft and Nokia was criticized by a lot of people in the industry and most notably by the Google employee Vic Gundotra who posted this tweet two days after Nokia's press release (figure 4.3) (Dediu, 2011b).



Figure 4.3 Google employee Vic Gundotra's tweet (@vicgundotra, 2011)

What Mr. Gundotra and the other critics meant was that Microsoft's decreasing licensing revenue and Nokia's falling smartphone market share would not cease because of a partnership and it would not affect the advancement of Apple and its iPhone.

As a result of the partnership Nokia released a new smartphone series called Nokia Lumia in October 2011 (Nokia, 2011a). At first there were two Lumia phones on the market; the

high-end Lumia 800 and the mid to low-range Lumia 710. They were supposed to replace the old Symbian phones and Mr. Elop expected a two year transition period before the partnership were fully up and running.

As illustrated in figure 4.4, Nokia sold 24.2 million smartphones during Q1 2011 (when the announcement was made) and in Q4 2012 (nearing the end of the “transition period”) the figure had dropped to 6.6 million (Nokia, 2011a). Of those 6.6 million, 4.4 million were Nokia Lumias and from the release in Q4 2011 to Q4 2012 Nokia had shipped a total of 14 million Lumias (Dediu, 2013a). That

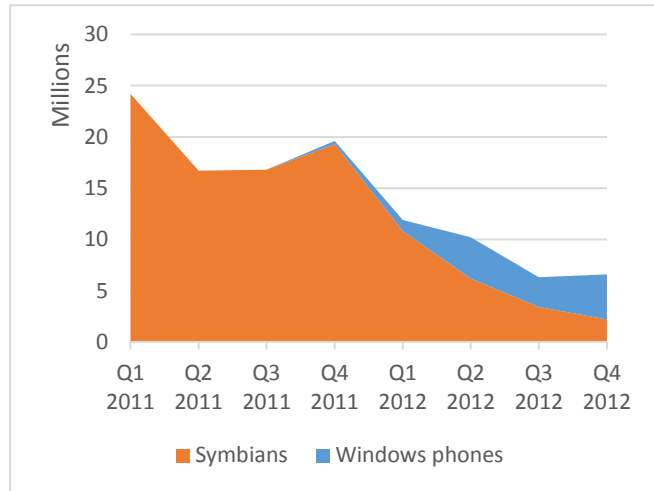


Figure 4.4 Nokia smartphone sales (Dediu, 2013b; Nokia earnings releases)

is a decline of 27% percent which compared to the global increase of smartphone shipments during the same period of 200% shows that Nokia is dropping in market share, fast.

4.7 Nokia post 2011

If we compare Nokia in 2007 to Nokia in 2012, much has changed. Their “pole position” as we described earlier has partly been taken away by Samsung which in 2011 took over the as the number one mobile phone producer. As shown in figure 4.5 Nokia still ships the most feature phones but Samsung has been able to capture more shares in the smartphone market. Nokia's market share has dropped drastically (figure 4.6) and it is mostly explained by the increased competition in the smartphone market. In addition to the dropping market share Nokia's margins have also decreased and in both 2011 and 2012 they made a net loss of 1 488 MEUR respectively 3 789 MEUR (Annual reports).

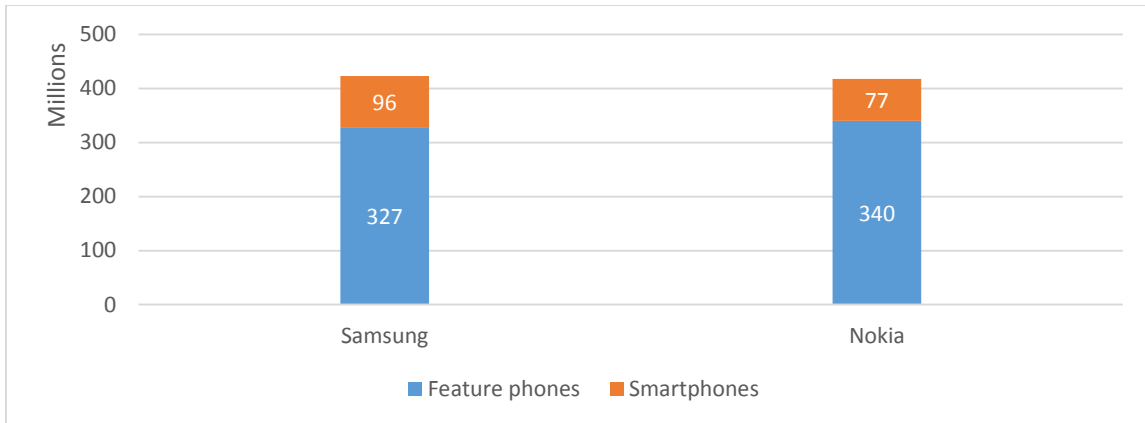


Figure 4.5 Mobile phone shipments 2011 (Dediu, 2012b; Nokia Annual reports; Samsung annual reports)

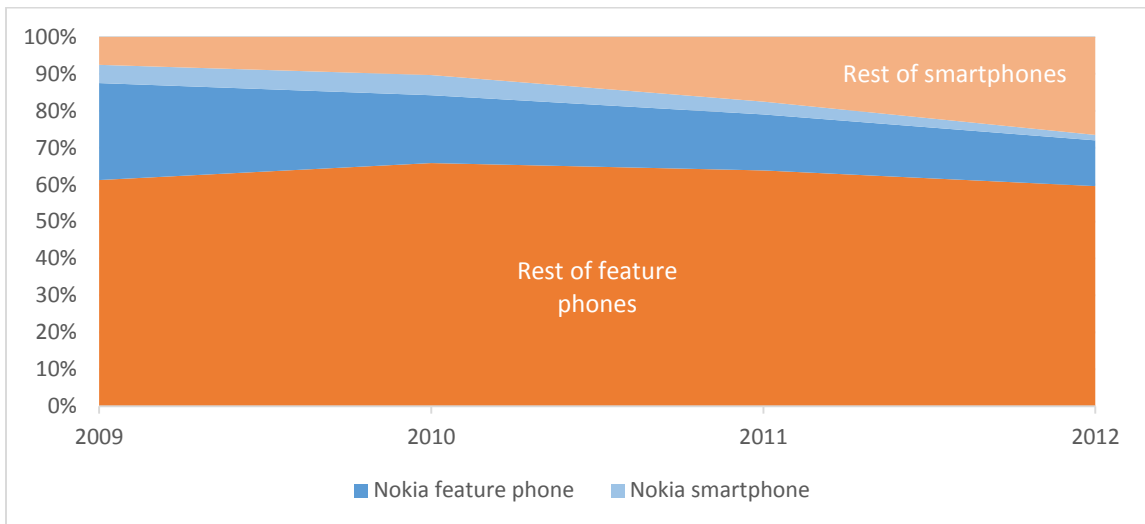


Figure 4.6 Nokia market share (Business Insider, 2013b; Nokia Annual reports)

Profit wise Nokia has gone from making a net profit of 6.7 billion EUR in 2007 to a net loss of 3.8 billion EUR in 2012. Much of the industry's profit has gone to Apple which, together with Samsung, is the only companies in the handset OEM industry currently making a net profit (Business Insider, 2013b).

Nokia's geographical sales trend has been consistent over the last 5 years and in 2012, most of their sales (64 %) came from Middle-East & Africa, China, Asia Pacific and Latin America and the rest (36 %) came from Europe and North America (Nokia 2012 annual report). That is probably correlated with the increased smartphone penetration rate in the western world which in Q3 2012 surpassed 50 % in the US (Dediu, 2013c).

4.8 Nokia's technology

Nokia had since the 1980s been one of the most technologically advanced handset OEMs in the world but was the decline in sales during the late 00s a sign that Nokia could not keep up with the industry's technological development (Giachetti & Marchi, 2010)?

Nokia had already at the EFA in Berlin in 1999 introduced a concept of a media screen with touch screen with internet connectivity and terrestrial TV, ten years before tablets became popular. Bryer (2013) emphasizes that touch screens in general was something that Nokia knew would be the future of mobile handsets and one of the form factors that were developed. A result of the extensive touch screen development was the Nokia 770. The Nokia 770 was released in May of 2005 and was one of the world's first internet tablets (Nokia, 2005).



Bryer (2013) argues that new trends, devices and technology in the handset industry rarely surprises anyone inside the industry. “When you are outside the industry it feels like things are happening really quickly but when you are inside an industry, things really took a long time”. 3G was one of the major emerging technologies during the mid-1990s but it was not commercially available until January of 2002 (Bryer, 2013). Former Nokia top executive Anssi Vanjoki talked during the late 1990s about voice applications and how they could disrupt the market when 3G was introduced, at least 5-10 years before Skype and other voice services entered the market. Bryer (2013) gives several more examples of this predictability: In 2000 he saw a presentation about mobile finance (which has been introduced to some markets) and connected light bulbs (and other household innovations) which were under development at Nokia over a decade ago.

4.9 If Nokia had the technology – why not an iPhone?

Nokia's technological capacity was very well comparable to any of the other handset OEMs. They had the highest nominal R&D spending compared to their biggest competitors. Also, the multi touch technology similar to the iPhone's is presented in a TED-talk initiative by

Jeff Han in a video almost a year before the launch of the iPhone (TED, 2006). This technology was developed by a lab sponsored by Microsoft and Nokia, among others (Bryer, 2013). Nokia had all the hardware technology necessary to build an iPhone device before the launch it Bryer (2013) and Dediu (2013d). Dediu (2013d) describes their technological capability of building an iPhone as: “They pretty much had all the technology laying on their shelves and could, on any given signal, produce it immediately”.

4.9.1 Nokia's relationship with the operators

According to Dediu (2013d), Nokia's relationship with the operators was very deep and of strategic importance. Operators were their biggest customers as they also worked as the distributors to the consumers. The operators owned the billing relationship with the consumers and therefore, in product development discussions, handset OEMs would invite the operators to participate in the process (Salz, 2010). If they did not like the product in the development process, handset OEMs did not even bother to proceed as the operators were, in fact, their biggest customers. (Dediu, 2013d)

The discussion of building an iPhone like product were held several times according to Dediu, but time after time, the discussion ended with the same argument; the operators did not like it. They could not see how they would make any more money out of a product like that compared to what handset OEMs were already selling. In fact, it looked like a product that would eat up a lot of bandwidth. Also, by opening up the window to the internet with a proper browser, operators were fearing the impact OTT would have on their walled gardens and revenues. (Dediu, 2013d)

A sign indicating the importance of the operators when it comes to product development is Nokia's tablet N770. Feature wise it resembles the modern handset touch form factor and Nokia, according to Dediu (2013d), could launch this because it did not have a cellular chip. That was a strategic decision, in order to avoid friction with the operators (Dediu, 2013d).

5 Apple's and Samsung's profit recipes

Out of all handset OEMs, there are practically only two of them that are making a profit. These companies are Apple and Samsung (Business Insider, 2013b). This case study will examine these two companies and how they have managed to capture 100% of the profit made in the industry. Even though they have this in common, the companies differ a lot from each other. Apple is originally a computer company that during the last 15 years has gone from being a company barely surviving bankruptcy to now being one of the world's most valuable company. Apple has created a walled garden with its ecosystem and high valued brand. Samsung on the other hand is originally a Korean conglomerate, producing everything from ships to building mobile phones under Samsung Electronics, now an independent company of their own. Samsung has recently taken over as the world's largest mobile handset producer and has mobile phones with several different OSs and currently over 65 different mobile phone models compared to Apple's three. Although Samsung produces almost seven times as many phones as Apple in 2011, Apple's operating profit was 4 times as large (Apple, 2011; Business Insider, 2013b; Samsung Electronics, 2011).

This case will start by a retrospect on the two companies' history before our focused time period starts (2007-2011). It will be followed by the most significant and important events during the timespan for each company respectively. We will end by describing their current situation.

5.1 Apple

As traditional handset OEM has fallen in market share, new companies have emerged in the mobile handset market. One of them are Apple which comes from the computer industry and have in just five years' time shipped more than 350 million smartphones making them one of the largest smartphone producer in the world (Apple earnings releases 2007-2012; Business Insider, 2013b).

5.1.1 History of Apple

Apple was founded by Steve Jobs, Steve Wozniak and Ronald Wayne in 1977. It started out as a computer company, selling them under the brand Apple and later, Macintosh. During the 1980s Apple lead the way with computers as the Macintosh 128K (released in January 1984) and the Macintosh plus (released in January 1986) which featured a computer mouse

(Apple, 2012a; Apple, 2012b). The successful sales resulted in that by the mid-1980s Steve Jobs, c/o founder and front figure of Apple, was one of the richest self-made men in the United States, by the age of 29. (Carter & Strange, 2011)

To cope with the rapidly expanding business Jobs hired former Pepsi executive John Sculley in 1983. Sculley and Jobs did not go along very well and Jobs decided to try to get the board of directors to get rid of Sculley. However, the board instead decided to support Sculley and Jobs were removed from his managerial duties in 1985. Jobs continued without Apple and created NeXT, a computer platform company, the same year. Eleven years later, Apple bought NeXT in order to access NeXT's newly developed OS NeXTSTEP and Jobs were once again hired as CEO for Apple. NeXTSTEP was an application based OS and served as a foundation of Apple's new OS, OS X. (Carter & Strange, 2011)

When Jobs returned as CEO of Apple, the company was in heavy financial burden and was only a couple of months away from bankruptcy. Nonetheless, Jobs managed to turn around Apple and in 1998 they were making a profit again. In 2001 Apple released two important music related products; iTunes and the iPod (Apple, 2001a; Apple, 2001b). iTunes is a “jukebox

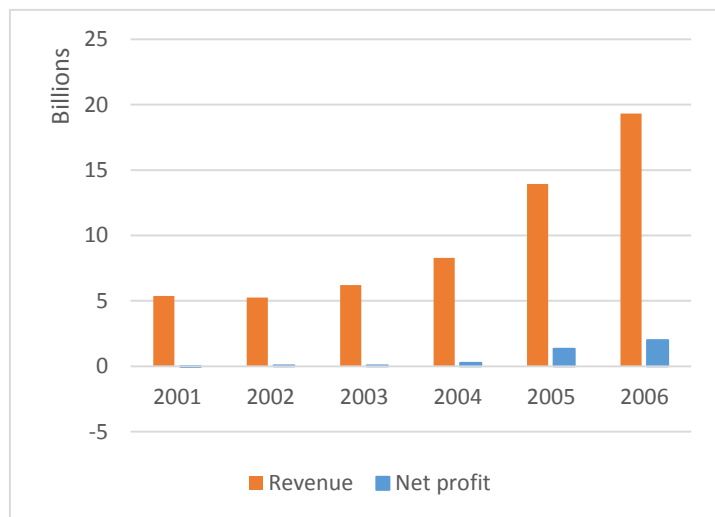


Figure 5.1 Revenue and net profit for Apple (Apple annual report)

software” that lets the user import, organize and buy songs on his computer and the iPod is a MP3 player. (Carter & Strange, 2011)

The release of iTunes and the iPod in 2001 had a great impact on Apple's revenue. As visible in figure 5.1, Apple almost quadrupled their revenue and went from making a net loss to having a margin at over 10% in just five years' time. Four years after the iPod's release it became Apple's largest revenue source and on April 9th 2007, Apple sold their 100 millionth iPod making the iPod the fastest selling music player of all time (Dediu, 2009). iTunes as a

product did not contribute that much to the revenue (about 10% in 2006) however it was one of the foundations of Apple's walled garden strategy (Dediu, 2013d).

Apple has changed a lot since it was founded; they went from being a rather small PC company in an industry dominated by Microsoft to being a company that, from time to time, (determining on the stock prices) has the highest market capitalization in the world (Kim, 2012).

If we look at Apple in 2006, just before the iPhone's release, they were a successful company with a steady profit and a great annual growth ratio. They shipped over five million computers (17% more than 2005) and almost 40 million iPods (75% more than 2005)(figure

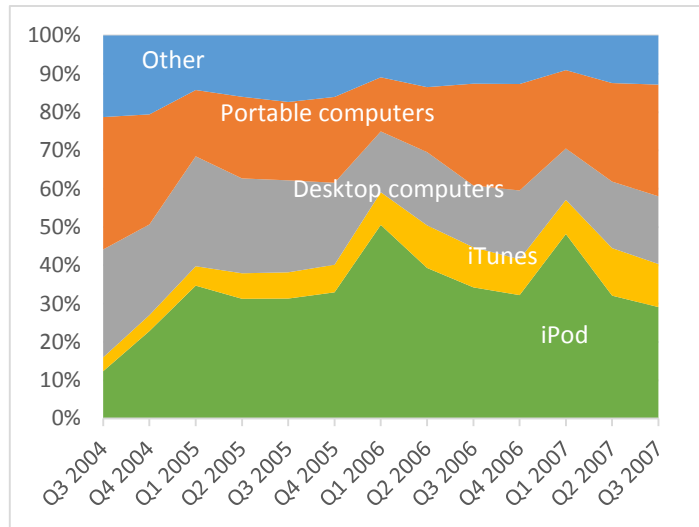


Figure 5.2 Apple's revenue and net profit (Apple annual reports)

5.2). Their main sources of revenue were desktops and iPods but in just two and a half years later a new product accounted for over 50% of Apple's total revenue; the iPhone.

5.1.2 The iPhone

On January 9, 2007, Apple announced that they were going to produce their first mobile phone. It was called the iPhone and here is how they described it in their press release the same day:

“Apple® today introduced iPhone, combining three products—a revolutionary mobile phone, a widescreen iPod® with touch controls, and a breakthrough Internet communications device with desktop-class email, web browsing, searching and maps—into one small and lightweight handheld device. iPhone introduces an entirely new user interface based on a large multi-touch display and pioneering new software, letting users control iPhone with just their finger.” (Apple, 2007b)

The iPhone has since been released in six different models in four generations; iPhone, iPhone 3G, iPhone 4 and iPhone 5. The current iPhones for sale are the iPhone 4, iPhone 4s and iPhone 5. Overall the layout has been the same throughout all models with few physical

buttons and the iOS operating system. At first, Apple distributed the iPhone only for AT&T customers and later they expanded to other network operators in different countries (Apple, 2007a). In Sweden the iPhone was available for customers at TeliaSonera from July 11th 2008 (Apple, 2008b).

How was the iPhone received?

Similar to when any kind of new technology hits the market, it is hard to make people realize that the product's (in this case the iPhone) advantages and how to use it. However, Horace Dediu means that Apple is the only company that can do such thing. “You have to get people to recognize that this product is something that they want to buy and use. Most people are not sophisticated, and when someone provides a full plate [e.g. an integrated solution, as the iPhone] then it is more attractive. Consumers finally says okay I'll try. That is apple, it is in their DNA.” (Dediu, 2013d)

The iPhone was almost immediately a hit and, as mentioned earlier, it took Apple about six years to sell 100 million iPods but with the iPhone, the 100 million mark was passed in Q2 2011, less than 4 years from its release. The 200 millionth iPhone was sold just one year later and as of Q2 2013, 356 294 000 iPhones have been sold (Apple's earnings releases). The iPhone's ASP is as of Q2 2013 around \$610 and Bryer estimates that an iPhone's bill of materials is around \$180 which means that they have a margin of about \$430 per iPhone sold (Apple earnings releases; Bryer 2013).

The iPhone gets competition

The iPhone has for many years been the top selling smartphone and has since 2009 had a market share of approximately 18%. However, during the last years Samsung's top-of-the-line mobile phone brand, Samsung Galaxy, has challenged the iPhones number one position as the top selling phone. Due to dropping iPhone sales in mid-2012 and rapidly increasing Galaxy sales (figure 5.3) the gap between them is closing in.

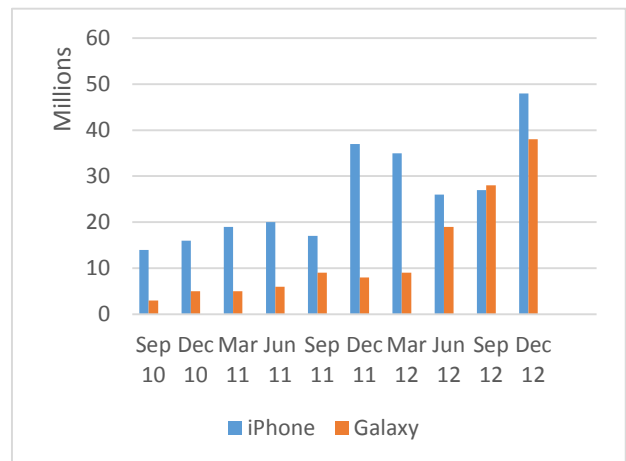


Figure 5.3 iPhone and Galaxy sales (Reed, 2013)

iOS

The iPhone has only been available with Apple's own OS, iOS (originally iPhone Operating System), and has come with preinstalled Apple applications such as Safari (a web browser), iTunes and their application market place App Store. The latter was released in 2008 together with the iPhone 3G and today App Store is approaching its 50 billionth download (Apple, 2008a; Apple, n.d.). The iOS is, as iTunes, part of Apple's walled garden and is only available through Apple products. iOS is the largest ecosystem with around 800 000 available applications, even though the growth rate is faster in Android which is estimated to break the 1 million milestone first (Apple, 2013; Womack, 2012). However, measured per user, iOS receive higher revenue per user compared to Android (Business Insider, 2013a).

5.1.3 Apple post iPhone release

As mentioned earlier, the growth rate that Apple had during the first half of the 00s was very high. However what they managed to do from 2007 to 2011 far exceeds their performance up to 2006. In figure 5.4 we illustrate how much impact the iPhone has had on Apple's revenue. Apple has from 2006 to 2011 had an average annual growth rate of 40% and in 2012, the iPhone accounted for almost 50% of the revenue.

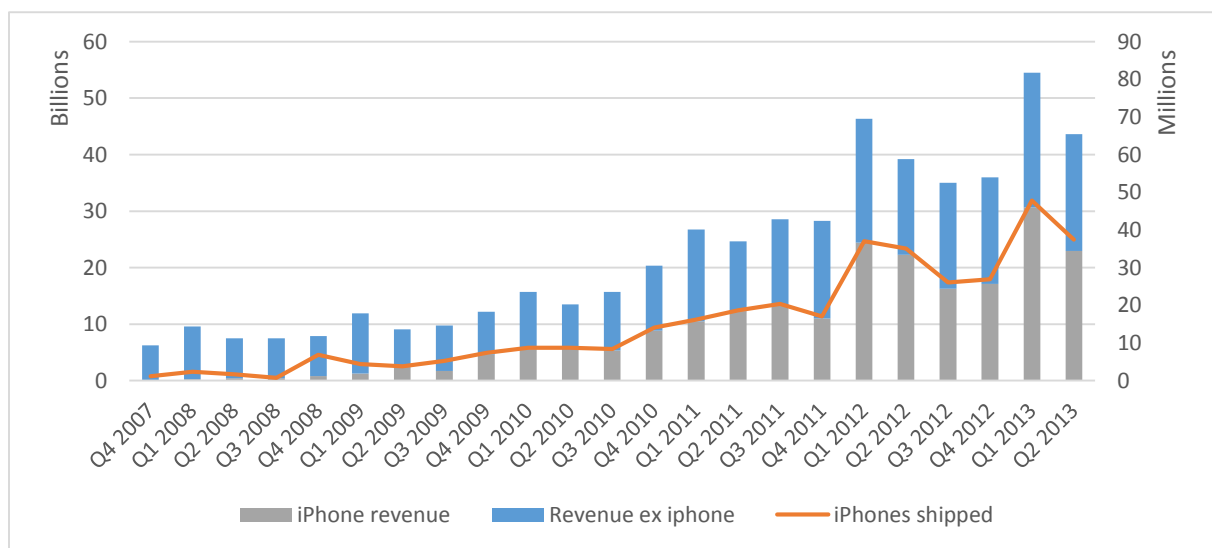


Figure 5.4 Apple revenue and iPhone volume (Apple earnings releases)

The quarterly volumes of iPhones shipped have correlated very regularly to the revenue which means that the ASPs have been constant. According to Bryer, one big risk for Apple is if their ASPs starts to drop. “Apple's ASP has been amazingly consistent ... that's what I'm

really impressed about ... when that [Apple's ASPs] starts coming down, that's something I'll really look out for ... That's when the industry really becomes commoditized.” (Bryer, 2013)

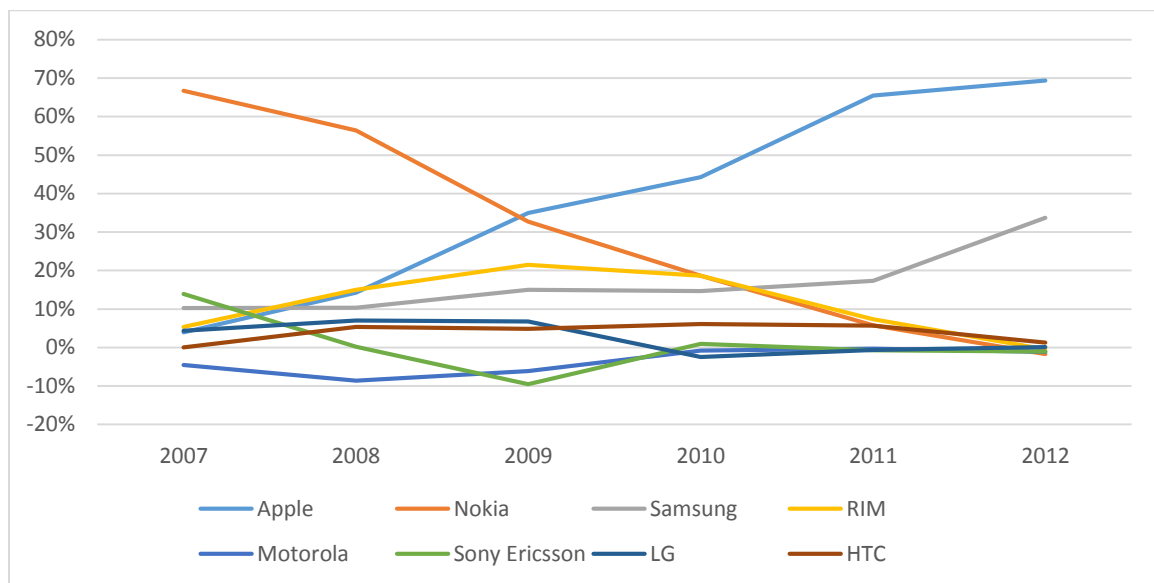


Figure 5.5 Operating profit share (Business Insider, 2013b)

Apple's market share has also seen a very stable growth and by the end of 2012 they had 20% of the smartphone market (Business Insider, 2013b). What is even more notable is Apple's operating profit share between the largest handset vendors in the mobile industry. In figure 5.5 it is visible that as Nokia has dropped in profit share in the same rate as Apple has gained in profit share and, by the end of 2012, Apple captured 72% of the profit made. Regarded that Apple sold about 5% of all handsets during 2012 they have the superior margins (Business Insider, 2013b). Except Apple there is only Samsung that has a significant share of all profits, all other companies are either making very small profits or losses.

5.1.4 Apple's brand value

Apple and its brand has for a long time been strong and has for over a decade been valued in the top 50s on Interbrands global brand ranking. Before the iPhone's release in 2007, Apple's brand was ranked number 35 and valued to 9,130 million USD and in 2012, they were second behind Coca-cola and their brand was valued to 76,658 million USD. In 2012, their year-on-year growth was 129% which was the highest increase of all top 100 brands that year. (Interbrand, n.d.)

5.2 Samsung

Twenty years ago, Samsung was mainly an OEM focusing its strategy solely on low cost and as many other Korean kongomerates, Samsung has put their brand on many different consumer electronics such as televisions and microwave ovens (Khanna & Palepu, 1997). Through a unique business strategy, combining Korean low cost manufacturing with western-style brand strategy, Samsung has in twenty years' time transformed itself to a world leader in both R&D and marketing. In the 1990s, Samsung's brand was rather unknown and in today it is among the top brands and valued higher than giants such as Nike, Pepsi and American Express. (Khanna, Song, & Lee, 2011)

5.2.1 Samsung's company structure

The Samsung group has a lot of different subsidiaries and the handset department is located in Samsung's largest subsidiary; Samsung Electronics. Samsung Electronics consists of nine departments: Visual Display, Digital Appliances, Mobile Communications, IT Solutions, Telecommunication Systems, Digital Imaging, Memory, System LSI and LED. Altogether Samsung Electronics had a revenue of 150 billion USD in 2011 which is about the same revenue as Apple. (Samsung Electronics, 2011)

5.2.2 Samsung Electronics

Historically, Samsung could be described as a typical multi business design Asian conglomerate, involved in many different industries (Khanna, Song, & Lee, 2011). Samsung's handset producing department has become more important in the last couple of years, reshaping the company to a more focused and single business design company with handsets and handsets components as their core business (Dediu, 2012c). It is estimated that handsets now account for more than half of Samsung Electronic's revenue and more than two thirds of its profit. If we look at the volume (shipments of phones, total) the number has increased from 103 million in 2005 to 330 million in 2011.

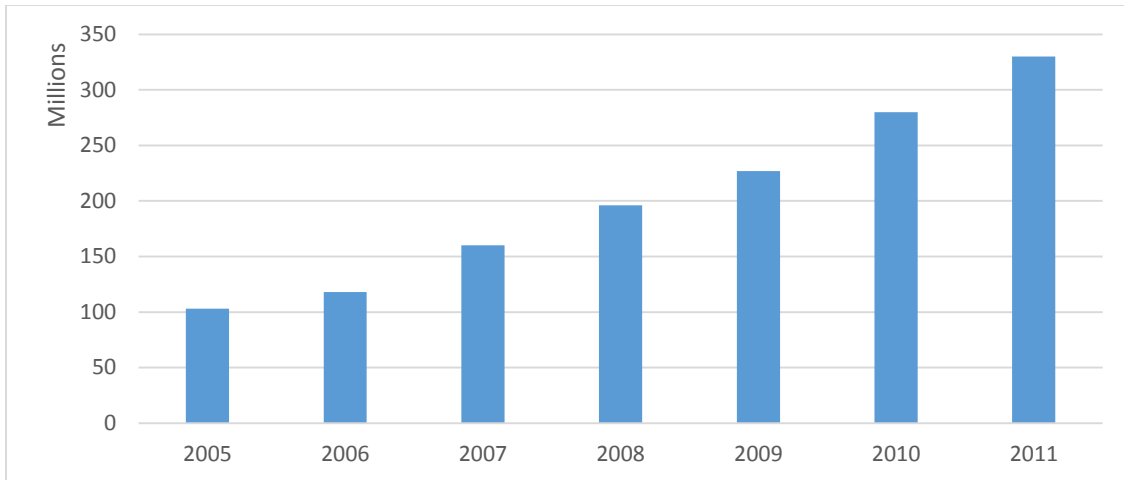


Figure 5.6 Samsung mobile phone shipment (Samsung annual reports)

In contrast with Apple and Nokia, Samsung produces much of its own components in house and can thus optimize their production and time to market. The three most expensive smartphone components are the NAND Flash (16GB is about \$20-22) the display (\$18-20) and the applications processor (\$15-17) and altogether they make up about 37% of a smartphone's average bill of materials. In all of these components' markets Samsung holds the highest market share which is around 30%. (Nomura, 2012)

5.2.3 Samsung pre Android

In 2007, Samsung shipped 160 million handsets making them the second largest handset OEM in the world. The company was quite stable with a three year history of making a profit around 8.5 billion USD with a revenue climbing from 87 billion USD in 2005 to 105 billion USD in 2007. In 2005, the department producing the handsets in Samsung, Telecommunication Systems, accounted for 26% of the revenue and 32% of the profit. The same figure for 2006 was 24% of the revenue and 8% of the profit. In 2007 the department accounted for 24% of the revenue and 35% of the profit. The biggest part of the revenue (27%) came from what Samsung called Digital Media, referring mainly to production of TVs, PCs and printers. Their most profitable departments were Telecommunication Systems, Semiconductor and LCD.

Before Samsung decided to start selling Android phones, their smartphone market share were very low. They had some windows phones (like the Black Jack II) as well as Symbian phones (like Samsung G810) (Bryer, 2013; Samsung Electronics, 2007). The success of

Samsung starting to use Android as their main OS for smartphones is illustrated in figure 5.7. Samsung sold around 6 million smartphones in 2009 compared to 212 million in 2012.

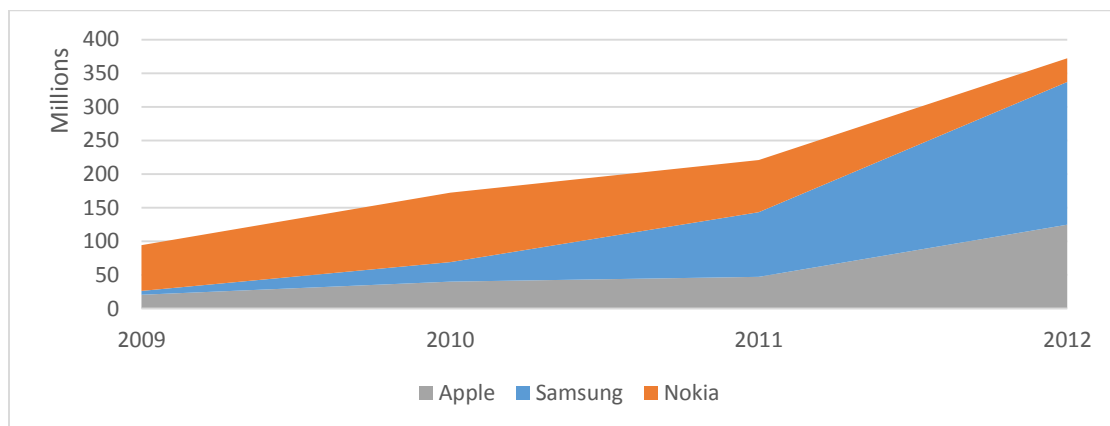


Figure 5.7 Smartphone shipments (Annual reports; Dediu, 2012b; Earnings releases)

5.2.4 Samsung reacts to the iPhone release

As the iPhone was released in June of 2007, the market of second generation smartphones with touch input opened up. Samsung was one of few companies that could keep up with Apple as far as technology goes. One of the reasons that they could do so has to do with that, as we mentioned earlier, Samsung Electronics have a very successful components business and, in 2011, they actually supplied Apple with about 26% of the iPhone's components (The Economist, 2011). Hence, when Apple first ordered x amount of microprocessors before the iPhone's initial release, Samsung could draw conclusions regarding what volumes that Apple were expecting to sell and in an early stage decide whether to follow or not (Dediu, 2013d). However, even though they could use the same components as the iPhone, they could not use iOS which meant that they had to use an external supplier. Samsung has always used multiple OSs for their smartphones and when Android entered the market, Samsung was fast to launch some Android phones as well.

Android was first released in October 2008 on a HTC phone and has since had a rapid increase in market share (Business Insider, 2013b). Samsung released its first Android based phone six months later named Samsung i7500 and in late 2011 they preceded HTC as the number one Android smartphone manufacturer (Business Insider, 2013b; Triggs, 2012). In figure 5.8 market share by OS in the smartphone market is shown and the dark blue part of the Android field is Samsung's Android share. Despite Microsoft's dropping market share

Samsung has continued selling Windows phones and has as of May 2013, four windows phones for sale.

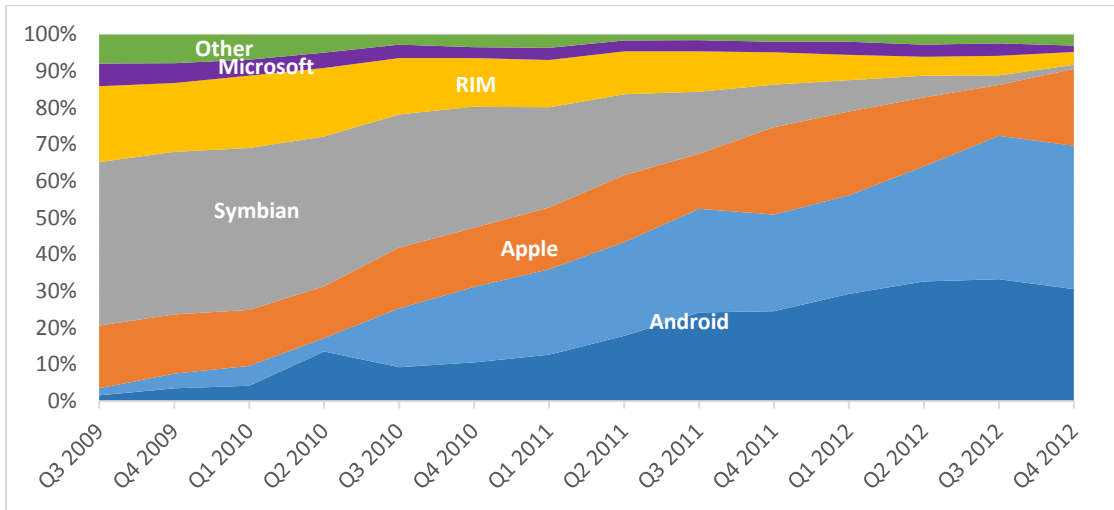


Figure 5.8 Market share by OS (Business Insider, 2013b; Dediu, 2012b)

Samsung has also been involved in other smartphone OS developments and was one of the owners of the former number one smartphone OS Symbian (West & Wood, 2008). During the second half of the 00s Samsung divested in Symbian and instead focused on their own OS named Bada. Bada was released to the public at the end of 2009 and is available on Samsung's low range mobile phones. As of May 2013, Samsung sells four different Bada mobile phones (on www.samsung.com). One year after Bada's release it took over as fifth largest OS (overtaking Windows mobile) and had around 3,000 applications available for download. However, in early 2012 Samsung announced that they will abandon Bada and instead cooperate with Intel and help develop the linux based OS called Tizen. Other companies in the mobile industry such as Huawei, NEC, Vodafone and Orange is also part of the Tizen project. (Bryer, 2013; Choi, 2012)

5.2.5 Samsung post 2011

After the entrance of iPhone, Samsung has managed to maintain a strong profit share in the handset market and has increased their annual sales extremely fast. Samsung's feature phone sales have started to drop (figure 5.9) and that is being covered up by their annual smartphone sales which have tripled on a year-on-year basis since 2009 and in 2012 they sold almost 400 million mobile phones. The

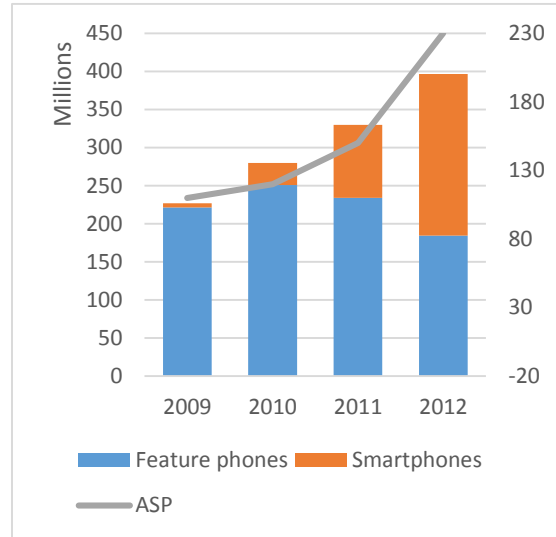


Figure 5.9 Samsung mobile phone shipment & ASP (Annual reports; Business Insider, 2013c)

percentage of smartphones as a percentage of total mobile phone sales have thus been increasing and in Q1 2012 they accounted for 47%. In Q1 2013, the same percentage was 61% (Dent, 2013). As earlier mentioned, Samsung has been moving their business towards smartphones. If we look at mobile phone market shares, Samsung has always been big. During the years our research focuses on, 2007-2011, Samsung has been the second largest handset OEM until they 2012 went past Nokia and grabbed the first place (Ahonen, 2010; Ahonen, 2012b). Samsung's mobile department has during these years increased in percentage of Samsung's total revenue (Samsung annual reports).

As of Q2 2012 Samsung's mobile phone ASP is ranked as the fourth highest, after Apple, RIM and HTC. Apple's ASP is, as we mentioned around \$640 and RIM's and HTC's ASP is between \$300-400. However, as Apple's ASPs have been very constant, Samsung's has risen and is catching up. The reason for that is partially because of increasing global ASPs and partially because of Samsung's increase Smartphone share of total sales.

5.2.6 The Galaxy series

Samsung's flagship models are called Samsung Galaxy. The Galaxy line consists of many phones and most notably Samsung Galaxy S4 which is Samsung's most expensive and top-of-the-line model. Although Samsung use Google's Android as a base, they have modified and added many Samsung-unique features. On the question why Samsung is able to capture more value than others, Bryer (2013) emphasizes the importance of those handset OEM specific features. "They [Samsung] have been a little bit more innovative. Very small things [have made difference]. They have been taking these tiny little incremental steps ... If you for example look somebody up in your phonebook on your device and then you hold it to your ear you will call." (Bryer, 2013) As mentioned earlier, Samsung Galaxy is catching up to the iPhone in terms of shipments and in December 2012, they were neck and neck (Leonard, 2013).

5.2.7 Samsung's brand value

Samsung has invested a lot in its brand value in recent years. In 2012 they were one of the main sponsors of the London Olympic Games and their strong position in the smartphone market has made their brand value increase with 40% during 2012 according to the Interbrand global brand ranking. They are currently ranked eight, six places behind their main competitor Apple according to the same ranking. (Interbrand, n.d.)

Samsung electronics has during the last years had a very high advertisement spending, visible in figure

5.10. In 2011 Samsung electronics spent around 3 billion USD which is almost as much as Coca-Cola, which is the world's most valuable brand. In comparison to Apple, it is clear that Samsung is expending significantly more than its competitors (other companies in the IT business such as Dell and Microsoft have advertising expenses equal to Apple). (Dediu, 2012d)



Figure 5.10 Advertising expenses (Dediu, 2012d)

6 Google's and Amazon's subsidizations

As earlier cases have focused on value migrating between companies but within the industry (handset OEM industry), this case is about value migrating between industries. We have looked how companies that earlier were not a part of the industry now have entered and changed the rules of competition for all players. Our companies are Amazon, coming from the retail industry and Google, whose core business lies in selling ads. They have both entered the handset industry, Amazon with their tablet Kindle and Google with their OS Android. Google provides Android for free and Amazon are selling their tablets around the production cost (Dediu, 2012a). What they have in common is that they subsidize their products as a strategic move to gain profits from somewhere else.

6.1 Amazon's Kindle

6.1.1 What is Kindle?

Kindle is the brand under which Amazon sells their tablets and e-readers. Their tablets goes under the name of Kindle Fire and their e-readers are sold under names like Kindle Paperwhite and Kindle 1. All of their current models are equipped with Wi-Fi and others with Wi-Fi and 3G/4G cellular chips. On amazon.com, they range from 69 \$ to 399\$ and they can be bought from Amazon's website or regular department stores. The first kindle was launched late 2007 and was quickly sold out (Amazon, n.d-b). Since then, Amazon shipped 2.5 million kindles in 2009, 8 million Kindles in 2010 and 18 million Kindles in 2011 (Business Insider, 2012). Just like Apple bundles their iPad and iPhone experience with their App Store, Kindle uses Amazons platform to form their ecosystem. They are both metal-to-cloud players, meaning they as a single company can offer both the hardware you are holding (the handset, tablet) and the content and services you are consuming. The user experience thus became integrated and Amazon, specially, complements its devices with the retailing of content. Examples of that could be e-books, videos, music and applications. (Schuermans, 2012a)

On their more advanced devices (Kindle Fire), Android is used as their OS. Amazon has made their own version of the Android OS, adapting it to their intended way of using it (Schuermans, 2012a). This involves clearer connections to the rest of Amazons ecosystem and it makes the tablet different in user experience from other Android powered tablets. It is

also equipped with a home built browser called Silk. Silk is a further tool to gain insight of Amazon's customers and to draw traffic to Amazon's retail channel, its web site.

6.1.2 Amazon's History

Amazon was founded in 1994 by Jeff Bezos. He is still the CEO and president of the company, holding 20% of the company's shares. In the beginning, Amazon sold only books. Their first sold title was *"Fluid Concepts & Creative Analogies: Computer Models of the Fundamental Mechanisms of Thought"* by Douglas R. Hofstadter. In May 1997, Amazon announced its IPO and it was traded on NASDAQ under the name AMZN. It expanded its businesses by starting selling DVDs in 1998 and in that year, they also acquired the popular webpage Internet Movie Database (IMDb). It was also the year they went overseas, opening up Amazon.co.uk (UK) and Amazon.de (Germany). The following year was a year of expansion. The following new departments were opened: Home Improvement, Software, Video Games, Gift Ideas, Consumer Electronics and Toys & Games. Founder Jeff Bezos was also announced "Person of the Year" by Times Magazine. In 2000 and 2001, the growth continued and Amazon revealed new partnerships with other retailers such as Toys "R" Us, Target and Border Group. The rest of the decade consisted of growth and expansion. Health & Personal Care, Gourmet Food, Sports & Outdoor, Apparel & Accessories, Office Products, Jewelry, Wedding and Grocery is just some of the new departments added to Amazons range of products. A part from organic growth, Amazon has acquired a series of companies during its history. The most prominent ones being LOVEFiLM International Limited, Zappos.com, AbeBooks, Fabric.com, Shopbop.com, Joyo.com, Alexa Internet and former mentioned IMDb. Their subsidiary Alexa is a company that ranks webpages after a certain set of factors and its owners, Amazon.com, is ranked 7th globally. (Amazon, n.d-a)



Amazons logo is set to present the range of products Amazon sells, with the arrow forming a smile going from A-Z (Dinesh, n.d.).

6.1.3 Amazon post Kindle

Apart from selling tablets, Amazon is one of the world's largest retailer. They sell their products from their website and in 2012 they had net sales over 61 billion USD. The same figure for 2011 was 48 billion USD and 2010 34 billion USD. Their home market, United

States, has accounted for around 42% for each of the past three years (Amazon, 2012). How big part of that sales that is derived from selling Kindles is hard to tell but if we count high and let the most expensive models price stand for the ASP for all Kindles, that figure would be 7.2 billion USD. The real number is probably much lower and according to Horace Dediu and Asymco, Kindle Fire accounted for 5 of the 18 million total units sold. Furthermore, he argues that Amazon is hardly making any money out of this so profit wise the figure would be close to nothing if not a direct operating loss (Dediu, 2012a). Instead, the Kindle has a big strategic importance for Amazon's core business.

Out of all of Amazon's retail sales, content as in Media, including books, music, movies, games and software, accounts for around 39% of all their sales. The rest is general merchandise (58%) and other (3%). Therefore it is important not only to promote things that you can consume from a Kindle device but also to draw traffic to the bigger part of the business. The Kindle works both ways here, both as a distribution channel for the media content but also as a promoting tool for the rest of the business. Amazon spends big amounts of their advertising budget on search engine optimization, and part of their effort with their Silk browser is to cut that spending by controlling the customer flows instead of purchasing sponsored links from e.g. Google. Their browser has some unique characteristics, with a lot of the processing taking place at Amazon's servers instead of at the consumer's handset. This makes it extra suitable for handset devices with smaller processing power and it also optimizes the data in a smart way that saves bandwidth. That is also attractive in rural areas where 3G and 4G reception can be poor. The next step would be for Amazon to launch an own branded smartphone as well as letting other handset OEMs license the Silk Browser. (Schuermans, 2012b)

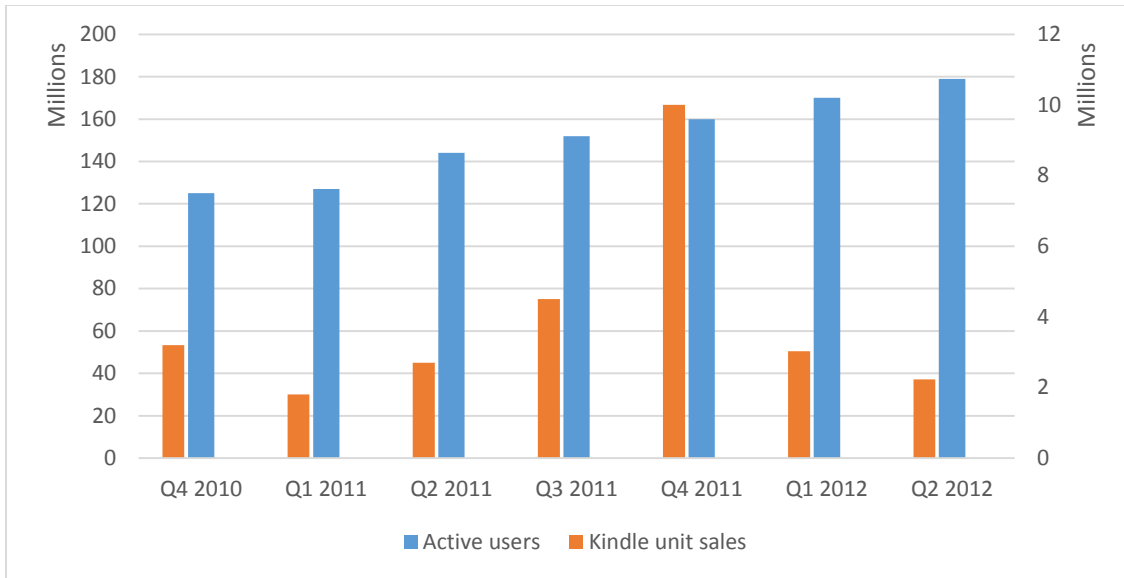


Figure 6.1 Kindle unit sales and active users of Amazon (Amazonstrategies, n.d.)

In figure 6.1, the sales of Kindles are illustrated in orange and active Amazon users is illustrated in blue. Kindle sales volume has been very volatile whereas Amazon's active users have grown steadily at an average of 6% quarterly.

6.2 Google's Android

Google is one of the largest IT companies in the world and its main source of revenue has throughout the years been online advertisement. When they in 2008 introduced their

Android for free many analyst firms and researchers thought that it was a strategic move of Google with the intentions of lower the costs of a smartphone and thus lowering the entry barriers to mobile internet and thus lower the barriers to Google's main revenue source, online advertising (Bryer 2013; Dediu 2013; Kenney & Pon 2011; Visionmobile 2011).

After 15 months from its release, Android managed to capture 25 percent of the smartphone sales (Kenney & Pon, 2011, p.

249). Android has emerged as one of the most popular OSs with the biggest market share and over 300,000 applications available (2011) (Vision Mobile, 2011). Mobile advertising still

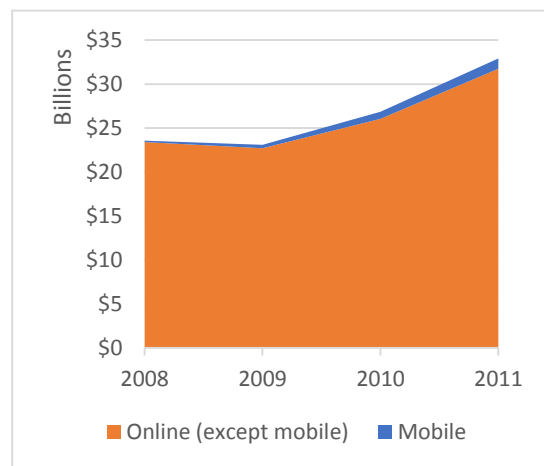


Figure 6.2 US online advertising revenue (Business Insider, 2013b)

accounts for a very small part of the total online advertising expenses and in the U.S. it was about 3.5% in 2011 (figure 6.2).

6.2.1 History of Google

Google was founded in 1998 by the two former Stanford University students Larry Page and Sergei Brin. They had a couple of years earlier, during their time at Stanford developed a search engine that was called BackRub. It was running on Stanford's own servers and due to high internet traffic the website was shut down in 1996. Page and Brin then started Google which almost immediately emerged as one of the world's top search engines and in June of 2000 they had an index of over 1 billion web pages which made Google the largest search engine of them all. (Google, n.d.)

Google has since expanded their business with products like Google Maps, News, Translate, Mail, Plus, Scholar, Drive and many more. They have also acquired the online video streaming service YouTube and mobile phone company Motorola. (Google, n.d.)

6.2.2 Android

Android is a Linux based OS, founded by Andy Rubin and Rich Miner in 2003 (Markoff, 2007). It was acquired by Google in 2005 with the intention to strengthen Google's presence in the mobile industry. It is free of charge to license Android from Google, and many of the largest handset OEMs sell Android devices. Android's user base has since its release grown in size and today, 1.3 million Android phones are activated on a daily basis, compared to the 300 000 births worldwide (Leonard, 2013). Android's market share is 72% and it has grown rapidly. From practically selling nothing in 2009, over 400 million units with android as the OS was sold in 2012 (graph 6.3). You can clearly say that Android is the market leader in handset OS, with its biggest competitor being iOS, holding around 20% of new sales 2012. The rest of the market is very fragmented with OSs like Bada, Windows Phone, RIM and Symbian as the biggest of the others. (Ahonen, 2012b)

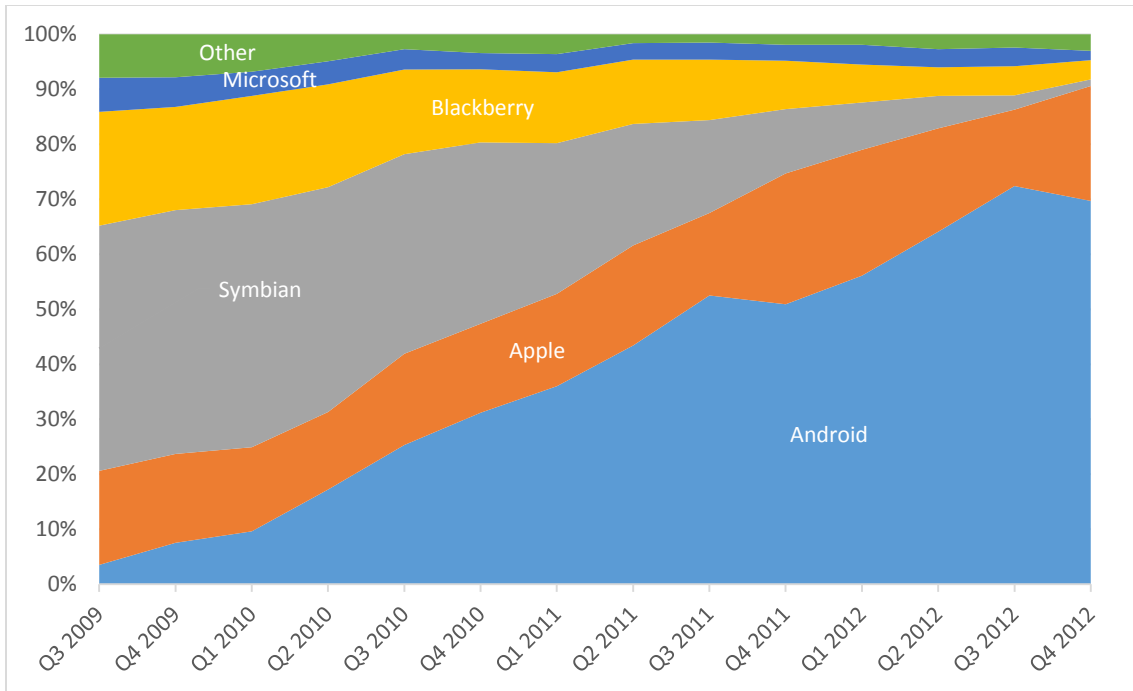


Figure 6.3 Market share by OS (Business Insider, 2013b)

Android is both sold as an OS for smartphones and for tablets, but smartphones accounts for the vast majority of all Android devices (above 90%) (Business Insider, 2012). Samsung is Android's biggest distribution channel, selling around 40% of all Android devices 2012. Google also sells Android smartphones and tablets under its own brand, Nexus, manufactured by other handset OEMs like Samsung, HTC and LG.

Google has seen a growth in its revenues over the past three years. In 2010, they had revenues of 29 billion USD, growing to 38 billion USD in 2011 and 50 billion USD in 2012 (Google, 2012). In 2011 and 2010, advertising accounted for 96% of the revenue but that figure decreased to 87% in 2012, much because of the acquisition of Motorola Mobile. Google's core business is ads, mainly through their popular search engine. That search engine has grown into a sphere that has integrated search to their other popular products like video (YouTube), maps (Google Maps) and e-mail (GMAIL).

6.2.3 What has Android done to the handset OEM industry?

According to Visionmobile, Android has made the market concentration less dense. Two years after Android's release, the number of companies with a global market share of more than 2% had gone from six to ten. Visionmobile also argues that the only way to make profit with an Android device is through speed or vertical integration (e.g. Samsung which controls

both components and handsets). “Android OEMs are in a race to the best device, a race which cannot be won” meaning that the device itself is not a basis of competition.

Horace Dediu believes that Samsung's position as the only profit making Android handset maker could be threatened if the Chinese handset OEMs catch up in terms of technology. “Nothing will distinguish a Samsung android phone from a Huawei android phone in a couple of months or a couple of years.” (Dediu, 2013d).

7 Absorption of Technology – The handset OEM industry's value capturing

The last case is about the absorption of technology and the value that the handset OEM industry has taken from surrounding industries of consumer electronics. The form factor, the performance and the technology inside a smartphone has changed drastically during our time frame 2007-2011. Out of the global mobile phone installed base, the feature GPS has grown from 1% to 19% and Camera has grown from 55% to 82% (Ahonen, 2012b).

7.1 The GPS industry – Use of GPS in mobile phones

Practically all smartphones are provided with some sort of GPS feature. This feature can be used both as a push technology, meaning that the feature is activated upon the users request providing the user with information, or as a pull technology, where it is activated by something else, an application or perhaps a mobile webpage while browsing. This gives the feature special characteristics, and the usage of the GPS feature vary a lot (Sjöberg, 2013). The most prominent use of GPS in handsets is maps, where the GPS tells the handset and the user their location. Furthermore, location can be used by applications and webpages. If you for instance are looking for a nice place to eat in an area you are not familiar with, there are applications like urbanspoon and yelp to help you find places nearby reviewed by other users. Other areas that uses the GPS feature in mobile are game applications (Gowalla), social applications (Facebook), local news applications (ACCU WEATHER), health applications (RunKeeper), children or pet tracking applications (RoomEO), service applications (TaskRabbit) and tourist guide applications (Pocketguideapp) among others. (Sales, 2010)

There are also examples of how webpages and applications with ads as a revenue source are using the GPS to better match the ads with possible consumers. If your location is Las Vegas, it is more likely that you will consume the service of gambling rather than the service of boat rental (hint; it lies in the dessert).

When it comes to pure mapping services, there are two different categories of applications; the native applications included in the OS and the OTT applications available on the different platforms such as Google Play and App Store. One example of this is Google Maps, available for Android, RIM, iPhone, Nokia s60 (Symbian) and Windows Phone devices. Nokia's HERE map service, Windows' Bing Maps and Apple's iOS Maps are other

examples of this. The other category is when the GPS is used in a map service from a company that are not considered as a part of the mobile industry but rather the traditional GPS industry or map industry. GPS producer TomTom are an example of that, providing a navigation application for Europe for around \$55 and America for \$73 on Google Play.

7.1.1 Sales on GPS – Mobile vs. traditional

In 2011, 42 million GPS units (personal navigation devices) were sold globally (O'Brien, 2010). If we assume that all smartphones are equipped with a GPS, then the corresponding number for GPS devices sold as a part of a handset would be around 471 million units (Business Insider, 2013b). If only half of the smartphones had a GPS feature, the vast majority of all handheld personal navigation devices would still be sold as mobile handsets. Then we have not accounted for all tablets with a GPS feature. Industry specialists Berg Insight projects a decline in traditional GPS sales from 2011's 42 million units to 30 million units in 2015 (O'Brien, 2010). Many of the GPS companies have multiple business designs, selling GPSs both to private consumers and for professional use in industries like maritime and aviation so their sales figures are not much of use when searching for a trend.



As handset OEMs have taken a big part of the GPS market, traditional GPS companies have launched more differentiated products. Both big players Garmin and TomTom provide product lines specialized for training, with arm wrist watches equipped with a GPS in order to track the jogging or the kayaking. While TomTom sells their map services on the mobile platforms as an app, Garmin has launched its own smartphone, Garminfone, sold at the joint website garmin.us.com. It is an Android device, built by Asus and apart from other phones it specializes on navigation.

7.2 The camera industry - Market moving to camera phones

Mobile phones are used instead of a traditional camera when taking pictures in 9 out of 10 times. Almost half of the installed base of mobile phones are equipped with a camera with a resolution of 3 megapixels or more. 2003 was the year when sales of camera phones

surpassed sales of digital cameras. Four years later, in 2007, the number of camera phones in use was higher than total cumulative sales of all cameras ever manufactured, both film-based and digital. In 2010, the total installed base of mobile phones equipped with a phone matched half the global population. (Ahonen, 2012a; Ahonen, 2012b)

7.2.1 Cameras in phones

The way we use cameras in phones differs from the way we use them in traditional cameras. Except from the pure camera function, snapping photos and saving them on the phones memory, there is a broad variety of usage. The main areas of usage of the camera feature on a phone varies from sharing, editing, uploading (cloud), documenting and scanning etc. Sharing photos can be done with several applications, and from many of the phones OS. Instagram is one of those applications, allowing the user to use filters as a part of their editing of the picture before uploading it on their platform, making it visible for the users connected friends and others. The company was recently bought by Facebook, which also provides the same feature but with another user interface. The acquisition cost Facebook around 1 billion USD. (Kederstedt, 2012)

Different cloud services, such as Dropbox, is also an availability for some of the user of camera phones. This gives the user the alternative to not only save the pictures on the handsets memory but also upload it and save it on the cloud service company's servers. Handset OEM HTC has made a deal with Dropbox, permitting every HTC buyer to receive an extra 25 GB space on their Dropbox account. Dropbox describes its service by referring to how sad it is to lose your phone when all your pictures gets lost too where the hardware can be replace but the pictures are lost forever (Dropbox, n.d.).

A complete other way of using the phones camera is to scan things. The camera scans a matrix barcode (a 2-dimensional barcode) and then activates a response. One usage is URL addresses, where the user scans a matrix barcode and then automatically launches a webpage instead of typing in the URL character by character. A popular matrix barcode system is the QR-codes, first invented by the Toyota subsidiary Denso Wave Inc. in 1994 (Furth, 2011). There are several different QR-code scanners available on different OS platforms.

7.2.2 The camera industry

In the camera market, there is a division between what the industry call point-and-shoot (PAS) cameras and single-lens reflex cameras (SLR). PAS cameras (often called compact cameras) are the category that resembles camera phones the most, since SLR cameras are much more advanced and bigger (less mobile). The biggest vendors of PAS cameras are Canon (19%), Sony (17.9%) and Nikon (12.6%) (Sawa, 2011). During the years 2008 to 2010, Sony reported a decline in compact digital cameras from 23.5 million units in 2008, 22 million units in 2009 and 21 million units in 2010. Even though volume went down from 2009 to 2010, their market share went up from 21% to 22%, indicating that the market shrunk between those years. Their division selling compact cameras, former called Video and now under the name Digital Imaging, have seen declining numbers on sales since 2007. This is illustrated in figure 7.1. (Sony annual reports)

We have also extracted the sales from

Nikons compact cameras and illustrated it in figure 7.2. The numbers were only available from 2007-2010. Compact cameras accounted for 30% of all camera sales 2007 and in 2010, the figure had decreased to 25%. After 2010 they consolidate all camera sales (including SLR) in one number which is why figure 7.2 ends in 2010. (Nikon annual reports)

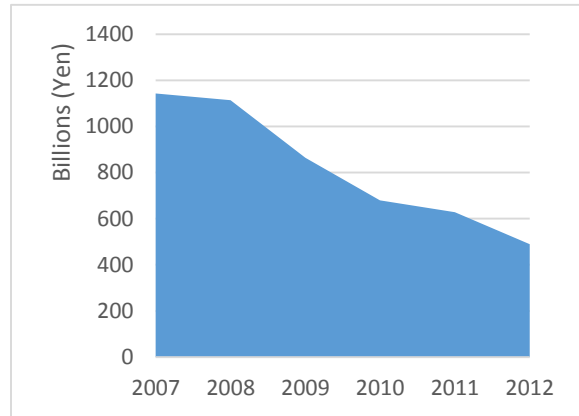


Figure 7.2 Digital Imaging (Video) Sony, revenue (Sony Annual reports)

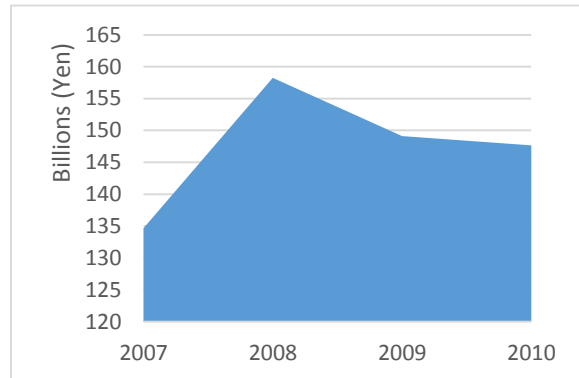


Figure 7.1 Compact camera sales Nikon (Nikon annual reports)

Nikon's volume of digital cameras has steadily increased from 2009 (figure 7.3). Unfortunately, they do not reveal numbers on volume for all the years, and the same goes for sales on compact cameras. The only years that is visible in both graphs are 2009 and 2010, where we can see a decline in sales but an increase in volume, indicating lower ASPs.

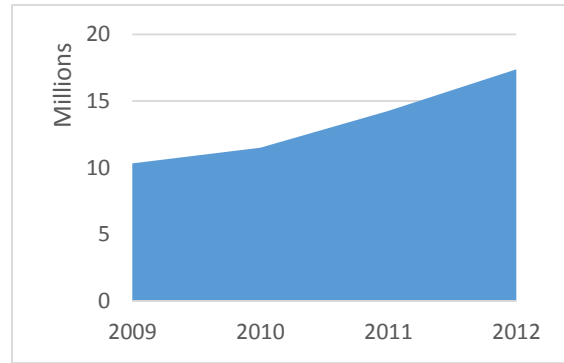


Figure 7.3 Volume compact digital cameras, Nikon (Nikon annual reports)

Canon's numbers are so consolidated that it is not possible to say anything about sales on digital compact cameras.

7.2.3 A new product segment

Samsung has launched a product that shares characteristics from both the segment mobile handsets and the segment compact cameras. It is called the Galaxy Camera, a camera running on Android OS Jellybean 4.1, equipped with both a 3G sim card slot and Wi-Fi. You can also send text messages on it, with the only thing missing from being a smartphone is the phone feature. Nikon has also released a similar product, the Nikon Coolpix S800c, but unlike Samsung's, it does not have a cellular chip. By combining the application feature of a smartphone and internet connectivity with the proper camera found in a compact camera, these products are in a category of its own. Just as smartphones and tablets, they can access all applications available on the different platforms and they also share the advantage of sharing the photos taken both for storage (cloud services) and for “show-off” (Instagram, Facebook). Unlike traditional cameras, the Samsung model requires an extra monthly fee from the operators to power the device with high speed connectivity unless you are using the Wi-Fi.

7.3 The computer industry

During the last decade and especially during the last five years we have seen a lot of new companies entering the mobile industry. Entrants from the computer industry like Apple, Hewlett-Packard (HP), Asus and Microsoft have in different ways and with different success tried to capitalize on the mobile market. Microsoft has its mobile OS which is struggling

with a declining market share that today is about 2% of the smartphone market (Business Insider, 2013b). Asus has a different strategy and is selling a "Padfone" which is an Android based 4.7" smartphone that you can slide into a tablet and use it with the larger, tablet screen (according to asus.com). HP, an established player in the PC industry waited until 2010 before they entered the mobile industry.

When computer companies in the early 00s started to move towards other industries (Apple towards music players and Microsoft towards mobile OSs) HP saw business opportunities in the PC industry and in 2001 they acquired Compaq. Almost a decade later HP tried to enter the mobile market by acquiring the smartphone manufacturer Palm (Hewlett Packard, 2010). "HP did the right thing to acquire Palm, but they did it far too late. In 2010 the game was over" (Dediu, 2011a). A little bit more than a year after the acquisition, HP announced that they would discontinue to develop the Palm OS which at the time had been renamed to HP webOS (Business Wire, 2011). Many companies have tried but so far, the only company to really succeed the transition from computer to mobile is Apple (Dediu, 2011a).

7.3.1 Change in internet usage – change for the computer industry

Internet was originally created in an environment that existed solely of computers and, up until the launch of Personal Digital Assistants (PDAs) with Wi-Fi connectivity during the early 00s, that was still the case. Since then, mobile phones with internet connectivity have increased continuously and in 2009, there were more mobile phones with internet connectivity than there were computers. Although internet has started to move beyond the computer and the fact that there are more phones with internet than computers, computers still account for a vast majority of website traffic.

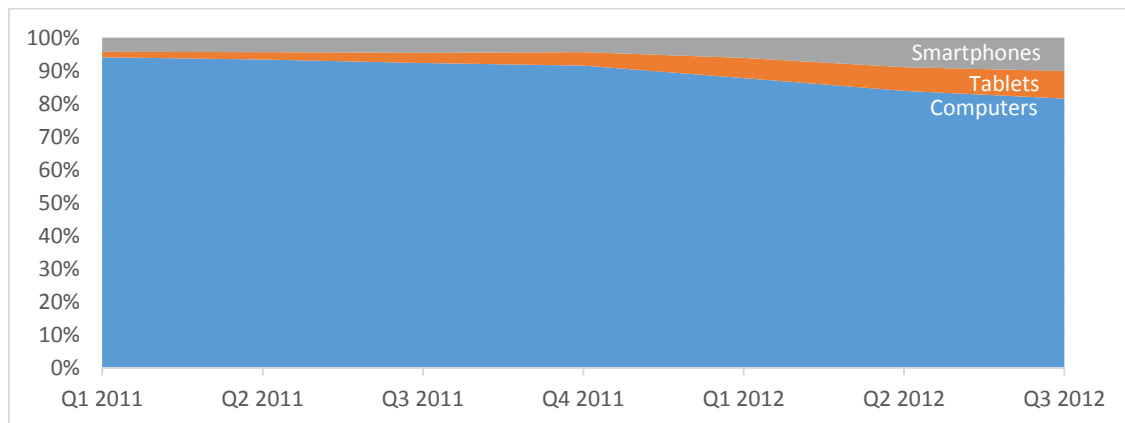


Figure 7.4 E-commerce web traffic by device (Business Insider, 2013b)

As illustrated in figure 7.4, in Q3 2012 around 80% of all e-commerce web traffic was from computers and 10% came from mobile phones. In overall web traffic, computers accounted for approximately 84% in early 2013 (Jones, 2013). The trend, according to figure 7.2, seems to be that computers' share of website traffic is declining with a couple of percentage points per quarter and is slowly being eaten up by tablets and mobile phones.

Sales

Market shares in the computer industry have been quite stable for the last five years with HP as the market leader (17% 2012). The top five largest companies, HP, Lenovo, Dell, Acer and Apple together captures about half of all sales and altogether 350 million computers were sold in 2012 (Business Insider, 2013b). However the increase in sales seems to have stagnated and at the same time, mobile phones and tablets are steadily increasing in sales. Illustrated in figure 7.5, smartphones' percentage of total internet device sales has increased dramatically and in Q3 2012, smartphone sales accounted for 60%. Tablets are also increasing in popularity and account for 10% of sales and 8% of website traffic.

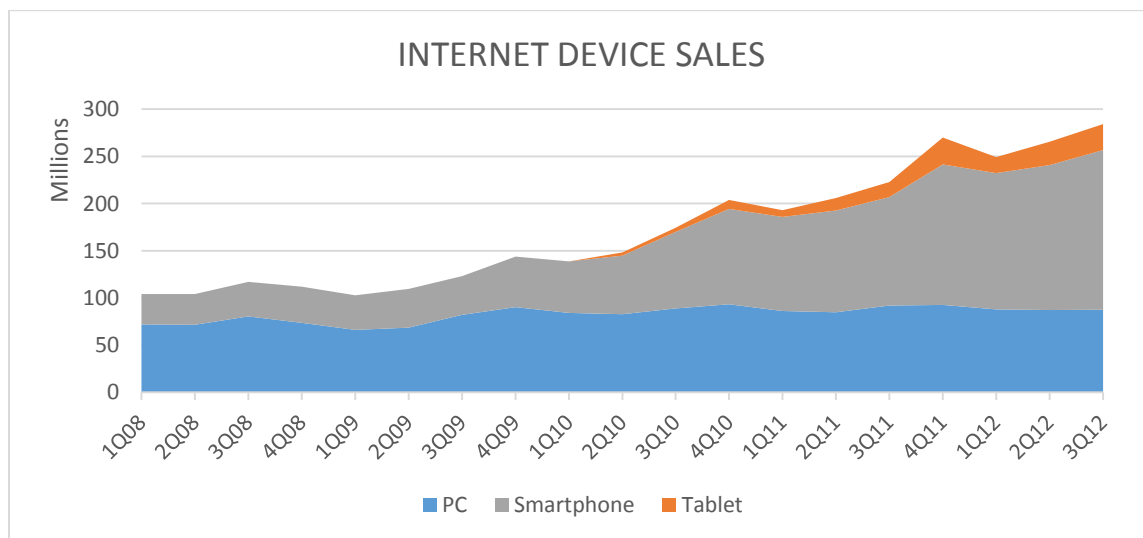


Figure 7.5 Internet device sales (Business Insider, 2013b)

If you combine computer, smartphone, tablet and PDA sales, the market shares changes dramatically. HP, which is the market leader for computers drops to a fourth place with 7% of the market in 2011. The new leader is Apple, due to its presence in the computer, the smartphone as well as the tablet industry. Apple has a market share of 21% and 200 million

units sold in 2011. The second and third places are also captured by companies mainly manufacturing mobile phones (Samsung and Nokia). (Ahonen, 2012b, p. 79)

7.3.2 The developing world – smartphones instead of computers

In the western world, most homes have a TV, often a fixed broadband and a computer. In contrast, in the emerging markets, TV is not something that exists in every home and land line broadband is very rare. Smartphones have up until now, mostly been sold in the western world and 2012 Africa only accounted for 5% (10 million) of the total smartphone sales (Business Insider, 2013b). In the western world, about 44% of the population has a smartphone compared to 7% in the emerging world. (Ahonen, 2012a)

As smartphones continue to drop in prices and the smartphone penetration continues to increase in the developing world, new opportunities and markets will emerge. In the western world, 54% of the population have a computer and 40% uses mobile internet. In the emerging world, only 11% have a computer but 22% have access to mobile internet. In the western world, the smartphone worked as a complement to the computer (since most people already had one) and other media platforms. In the developing world however, the smartphone will be the first multimedia device people will own since most people do not have a computer or a TV. Mobile phone services are increasing in popularity in the emerging world. In India, 21% of the mobile phone users consume news on their device and in Kenya, mobile banking accounts for around 30% of the country's GDP! (Ahonen, 2012a, pp. 159-163)

8 Analysis

8.1 Value flow framework

After working with the empirics there is a need to update the theoretical framework (p. 25) to a new version. The area of research has covered disruptive innovation which can be describes as a trigger for change. Change in this case is value migration. Value migration can be triggered from other things than a disruptive innovation and to broaden this initial part of the framework we have renamed it trigger instead of disruption.

Furthermore, the second stage of our former framework, value migration, is now called direction to emphasize that the important part of this step is to look at the *direction* of the value flow instead of just establish that value migration has occurred.

Finally, in the former framework we had only taken into account the impacts from the company's strategy on value migration. After having studied the empirics, we realize that these factors comes from both the company (its business model) and from the environment it operates in (competitors, its industry and other industries). We have thus used a more generic terminology to include all factors that accelerate or decelerate the value flow. This is all leading to the outcome, which is the last step of our framework of analysis. We will call this for our value flow framework.

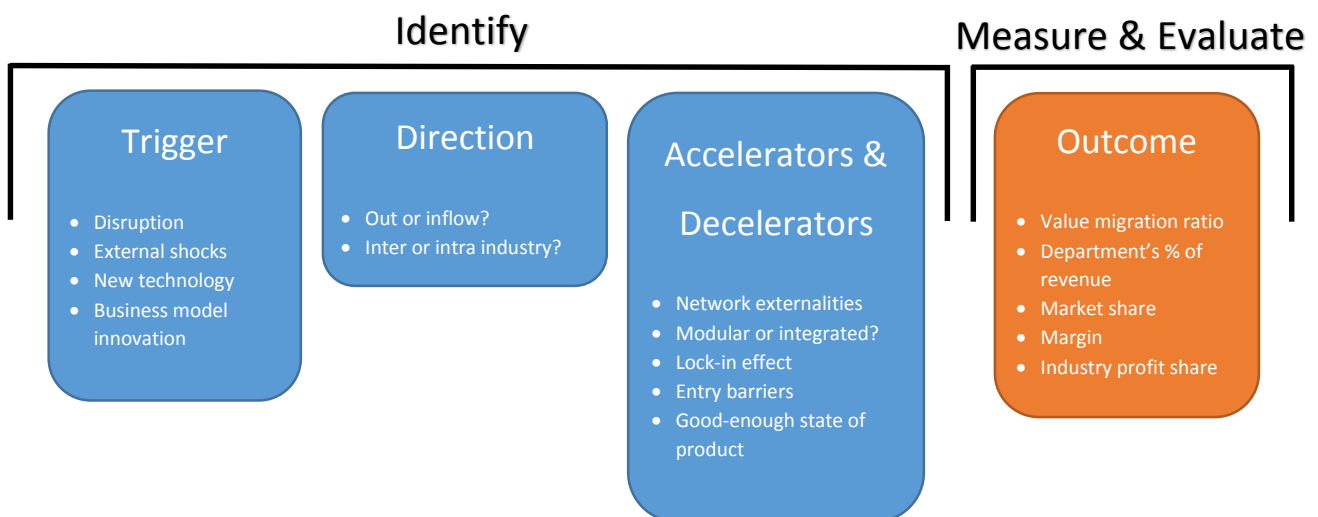


Figure 8.1 The updated value migration framework now consists of four steps of analysis.

8.1.1 Triggers

A trigger is something that initiates a change, in this case meaning a value migration. This something can consist of several different aspects. A disruption (Christensen C. M., 2003) is clearly an example of a trigger. Within his definition of a disruptive innovation lies both technological and business model innovations. Furthermore, Slywotzky (1996) argues that a value migration can be caused by external factors such as legislation, technological progress and financial instability. Johnson et al. (2008) introduces the business model innovation that also is something that can trigger value flow.

8.1.2 Directions

After the triggers are identified, the direction of the value flow needs to be recognized. As earlier mentioned, value can migrate between or within an industry and it can be absorbed by or taken away from an industry/company. This is the Slywotzky (1996) way of doing it. Apart from this, two different industries and products can serve the same need and by looking at how this need is served relatively through time, value migration can be identified when between industries.

8.1.3 Accelerators and decelerators

When the trigger and the direction of the value migration is set, it is important to look at the environment surrounding the flow of value (company and industry) and look at how it affects the value flow. Generally, when the flow of value is absorbed by a company, the decelerating activities (defense) comes from outside the company and vice versa. Apart from industry affecting value flow, it can also differ depending on the company's characteristics, e.g. adjustability in its business model (Slywotzky, 1996) or from its relationship with important stakeholders (Porter, 1979).

In this step we will use the theories regarding business innovation (Johnson et al., 2008), platform strategy & network effects (Cusumano, 2010a; Cusumano, 2010b; Cusumano, 2011; Kenney & Pon, 2011), Walled garden (Mehra, 2011), entry barriers (Christensen & Wessel, 2012) and responses to disruptive strategic innovation (Charitou & Markides, 2003). We have found that they all in some way or another affect the magnitude of the value flow.

8.1.4 Outcome

Finally, the outcome of the value migration will be presented. The main theoretical tribute in this section will be Slywotzky's (1996) value migration ratio which functions as a measure of which phase the value flow is in. Moreover, a brief summary of the empirical findings will be presented. Also, the outcome can measure and evaluate whether or not the identification process of the trigger, the directions and the accelerators and decelerators are in line with the empirical results.

8.2 Nokia

8.2.1 Trigger

In 2007, Nokia had a significant part of the smartphone market and the OS with the biggest market share, Symbian, was tightly connected to them. However, Symbian was not designed for third party developers and therefore did not experience same growth in OTT content as its new competitors; Android and iOS. Nokia kept on producing Symbian phones and, without a competitive ecosystem, they started to lose value. Nokia did not realize that the base of competition had shifted and was no longer in product performance, but rather in flexibility. Their incapacity of adjusting their business model to the shift of demand is a common issue for successful companies when the market matures and this triggered a value flow (Christensen et al., 2001).

8.2.2 Direction

Since Nokia could not compete with other handset OEMs with better ecosystems value started to flow out of Nokia. The total revenue and volume of the handset OEM industry was increasing rapidly but in Nokia the trend was going in the opposite direction. This implies that the value stayed in the industry and thus the flow out of Nokia was captured by other industry competitors.

8.2.3 Accelerators & Decelerators

According to Dediu (2013d), Nokia's relationship with the operators prevented them from fully capitalizing on the available technology to launch a multi touch smart device before anyone else. As the point Bryer (2013) made, technology can never surprise anyone in the industry, so it is safe to say that Nokia knew about and could use the technology resulting in the iPhone. The operators did not see how they could increase their profits through this new device and this hindered Nokia from preventing the trigger in the first place.

As Android and iOS attracted lots of third party developers and managed to build an ecosystem of applications, Symbian was not designed with the emerging smartphone ecosystem in mind and lost in competitiveness due to less content. Thus, Android and iOS expanded rapidly with high network externalities boosting the growth and value capture while Symbian lost market share, fast.

Since Symbian was not designed for the new ecosystem based smartphone market, they had to abandon it and choose a competitor's OS. This is a typical example of leader's dilemma (Kenney & Pon, 2011). Nokia had two strategic choices regarding their OS:

1. Develop their own OS

In this environment, with strong network effects, time is crucial since it is very difficult to start a network with already established alternatives. To develop a mobile OS is time consuming and also expensive. Thus, this was not a good alternative.

2. Adopt an already existing OS

In the OS industry, there were practically two options; Android or Windows Phone. As Android was the far more established OS between the two, Nokia would have lost the opportunity to create a competitive advantage if choosing them. Windows Phone did not have as large ecosystem as Android but it gave Nokia the possibility to differentiate and charge a premium price.

As we know, Nokia chose Windows Phone and as network theory tells us, Windows' OS has struggled to stay competitive against larger ecosystems in the smartphone industry.

8.2.4 Outcome

The outcome of this value migration for Nokia is:

- Nokia is now second after Samsung in terms of mobile phone shipments and in the smartphone segment they only shipped 35 million units, six times less than Samsung.
- Nokia has gone from having 70% (2007) of the handset OEM industry profit to making a net loss (2012).
- Nokia's value migration ratio between 2007 and 2011 has moved from 1.7 (stable phase) to 0.33 which, according to Slywotzky's theory, confirms that value is flowing out from Nokia.
- Mobile department's percentage of revenue has doubled from accounting for one fourth of Samsung's revenue in 2007 to half of their revenue in 2012.
- The handset part of Nokia has gone from accounting for 80% of revenue in 2007 to less than 50% in 2012.

8.3 Apple

8.3.1 Triggers

During the late 00s, the mobile industry moved towards the PC industry when looking at product features. More and more features traditionally found in a PC could now be found in a handset like e-mail and web browsing. Apple, who was not present in the mobile market decided to release a phone which triggered a value flow. According to Dediu (2013d) their non-existing relationship with any operators made it possible for Apple to design a phone without the operator's strategic opinions in mind.

There is two main reasons that made the iPhone a value flow trigger:

1. It managed to link two novel activities in a new way which made their customer value proposition more attractive (Amit & Zott, 2012; Johnson et al., 2008). The two activities were regular mobile phone use with a superior browsing experience (Bryer, 2013). The touch interface was new to the market and it made web browsing very intuitive and easy to use.
2. It opened up a new door to Apple's already existing walled garden. As explained in the empirics, by the time of the iPhone's release, Apple already had a successful

ecosystem with its computer OS, OS X, their music program iTunes and the music player iPod. With the iPhone, Apple made it possible to enter the Apple sphere from a mobile phone. Since the platform already was up and running the big user base (more users means higher value) made it more attractive to enter according to network theory and Metcalfe's law (Katz & Shapiro, 1985; Cusumano & Gawer, 2002).

8.3.2 Direction

The iPhone was a success, and thus value started to flow into Apple. If we look at the profit share in the industry, Apple gained shares in the same rate as Nokia lost which implies that the value migration in terms of profit was taken place inside the industry, from Nokia to Apple (Business Insider, 2013b).

8.3.3 Accelerators and decelerators

Apple managed to capture 70% of the handset OEM industry's profit in just five years' time which indicates that the accelerators in this case were more prominent than the decelerators. As mentioned above, network externalities had a great impact on the value flow. Since a network's value grows exponentially, and apple's network already had been growing steadily from the 2001 when iTunes and iPod were released, the effect of the iPhone was very prominent. What further accelerated the value flow was Apple's strategic intention to create a walled garden with strong lock-in effects. iMessage is a feature that allows the user to send texts through data given that the receiver also has an iPhone. iTunes is preinstalled on all Apple devices, functioning as a customer acquisition tool when selling content. The convenience of owning multiple Apple products when dealing with features like iMessage, calendar, notifications etc. functions as a way for Apple to lock-in their customers as they synchronize seamlessly between the devices.

This value migration absorbed by Apple has been tried to be stopped by different players. As a way for Google to break Apples dominance and introducing themselves to the mobile industry, they launched Android. Android's more open approach together with OTT content both distributed by the browser (available to anyone) and through other OS's platforms (e.g. Google Play) are all decelerating Apple's value absorption.

8.3.4 Outcome

The outcome of this value migration for Apple is:

- Apple is capturing 70% of all profits in the handset OEM industry due to first and foremost of their attractive ecosystem, but also their strong brand (2nd highest valued in the world after Coca-Cola) and fully integrated user experience.
- Apple has the highest ASPs of all handset OEMs and has remained fairly constant at over \$600 which is a lot higher than the industry average. We can see two reasons for this. Firstly, it is because they only sell three different phones which all are high-end smartphones. Secondly, they can take a high premium price on their iPhone, not because it contains superior hardware but rather because the iPhone is the only mobile phone that provides entry to Apple's ecosystem.
- Apple's value migration ratio between 2007 and 2011 has moved between 3-5 which, according to Slywotzky's theory, confirms that value is flowing into Apple.
- Apple's mobile department's percentage of their total revenue has risen and is now about 50%

8.4 Samsung

8.4.1 Triggers

At the same time as the smartphone market started to expand in the mid 00s, Samsung had a special role as both key supplier to Apple's iPhone but also as a competitor in the industry. Apple's orders gave Samsung insider information about Apple's projected sales numbers and quickly decided to follow. More importantly, the components that Samsung were experts on became increasingly important and valuable in the smartphone market, with higher demand on large HD-screens and microprocessors. They controlled what Christensen (2003) defines as the interdependent links of the value chain, which according to him is what generates the most of the profits.

8.4.2 Directions

Their revenue has doubled from 2007-2012 and the department selling handsets have tripled during the same period which indicates that they have absorbed value.

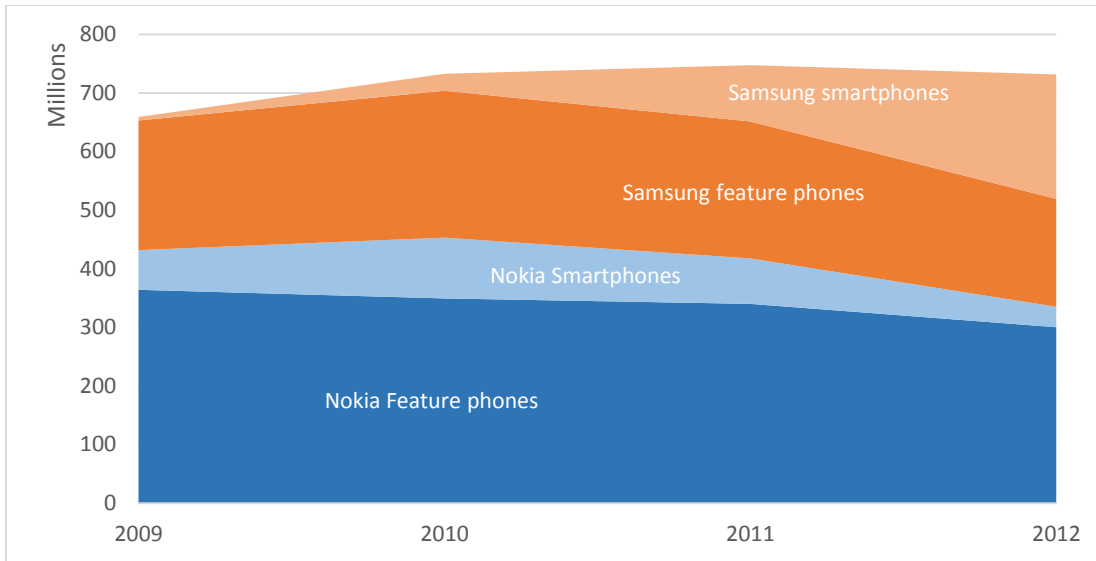


Figure 8.2 Nokia and Samsung, volume (Annual reports; Business Insider, 2013c)

If Apple took Nokia's profit, Samsung has clearly gained value by capturing Nokia's volume. Figure 8.2 illustrates how Samsung and Nokia's mobile phone volume has developed. The only segment that has increased is Samsung's smartphone shipments. Samsung is now the biggest manufacturer of mobile phones, and as this position is relative others, the conclusion is that they have taken this value from other handset OEMs, and mainly from Nokia.

8.4.3 Accelerators and decelerators

As Christensen states, *"Don't outsource the thing that's going to make lots of money next"* (Christensen et al., 2001, p. 74), Samsung has kept their production of components whereas other handset OEMs have not. This means that Samsung is able to capture profits all along the value chain where other handset OEMs have outsourced this production and lost potential gains.

Their market leadership in components also gives them the advantage of shorter time-to-market compared to their competitors. A shorter time to market means first-mover advantage, which gives them the ability to keep on absorbing value. Their investments in their brand have given them a stronger recognition which also have led to increased sales (Dediu, 2013d).

They have made efforts in creating their own OS with examples of BADA and Tizen. If they would have succeeded with this, an even greater part of the value chain could have been captured and their potential differentiation would be more significant, giving them the ability

to charge a higher premium. As it is now with Android commoditizing most of the mobile OS industry, this is not possible.

8.4.4 Outcome

The outcome of this value migration for Samsung is:

- Samsung is the biggest handset OEM in terms of volume and they account for around 15% of world sales of mobile phones. They also have the biggest market share in the smartphones segment.
- Samsung is capturing around 30% of the operating profit in the industry.
- Samsung's value migration ratio between 2007 and 2011 has moved between 2.5-3.5 which, according to Slywotzky's theory, confirms that value is flowing into Samsung.
- Mobile department's percentage of revenue has doubled from accounting for one fourth of Samsung's revenue in 2007 to half of their revenue in 2012.
- Although Samsung has been profitable in the handset OEM segment of their business, it remains unknown the internal pricing between that department and the component manufacturing department, making it uncertain to tell if Samsung is capturing profits by selling handset or by selling components.

8.5 Android

8.5.1 Triggers

During the mid 00s, more and more people started to connect to the internet through their handsets instead of using a PC. At the same time, the mobile industry was moving towards the PC industry and IT, with a higher demand within the industry on PC and IT competence. This evolution made it possible and necessary for Google to enter the mobile industry. This led to the launch of Android.

8.5.2 Directions

Android is the biggest mobile OS in terms of user base and the second biggest in numbers of applications. Android is free to license and has thus not created any value within the mobile industry. Instead, it has commoditized the OS industry, leading to value flowing to Google. This value has been transferred into more Android users, which according to Metcalfe's law means a higher value of Android, and thereby Google. The money lost by

Google for giving Android away for free is captured in another part of their business model; ads. This is a typical example of a two-sided business model, and in terms of value flow, value has flown from the handset industry's OS part to the ad industry.

8.5.3 Accelerators and decelerators

First of all, Android is completely free to use which according to Bowman and Ambrosini's (2000) definition of value gives Android an unlimited consumer surplus. This has accelerated the flow of value, with less incentives for handset OEMs to develop their own OSs.

As with every other platform, network externalities have further accelerated Android's growth. The same can be said about their biggest competitor, iOS. Android has a higher amount of users but iOS and Apple are able to charge a premium for their OS. A decelerator in this case would be the competition from other OSs, with Apple's iOS as their biggest rival.

8.5.4 Outcome

The outcome of this value migration for Android is:

- Android has in its four year existence captured 70% of the smartphone OS market.
- Since it is free of charge, Android has commoditized the OS in the mobile industry.
- Google's value migration ratio between 2007 and 2011 has averaged 7 which, according to Slywotzky's theory, confirms that value is flowing into Google. However, how big part of this that is absorbed from the mobile industry is uncertain due to Google's many different business areas.

8.6 Kindle

8.6.1 Triggers

Lower hardware prices along with a free OS and increased usage of internet on mobile devices strengthened the incentives for Amazon to enter the handset OEM industry. This resulted in the launch of Kindle.

8.6.2 Direction

Since Kindle is subsidized, the price difference between an unsubsidized comparable tablet and the subsidized Kindle reflects the value that has been flowing out of the handset OEM industry and in to retail. We can prove this by the following chain of causalities. Kindle has

been sold in around 30 million units. Kindle users are more likely to visit and consume Amazon products than other tablet users. Thus, value has moved to retailing (Amazon) from the handset OEM industry through the subsidization and the sales of Kindle devices.

8.6.3 Accelerators and decelerators

We have seen no significant correlation between Amazon active users and sales of Kindle devices. The impact Kindle has had on Amazon sales are hard to measure, as well as the impact Kindle sales have had on sales of other tablets. Amazon has added a novel activity (tablets) to their CVP which is a business model innovation (Amit & Zott, 2012). However, we have not seen any big impacts of this value flow on the handset side. Instead it is on the retailing side that we have seen growth in both revenue, active user base and profits. How big part of this that can be explained by value migration from the mobile industry is, as earlier mentioned, hard to estimate.

8.6.4 Outcome

The outcome of this value migration for Kindle is:

- They have captured a market share of around 20% in the tablet industry by selling an accumulated number of 30 million units.
- Amazon's value migration ratio between 2007 and 2011 has constantly been between 1.6-1.9 which, according to Slywotzky's theory, states that Amazon is in the stable phase where no value is flowing in or out. This corresponds to our empirical results.

8.7 Technology absorption

8.7.1 Triggers

Ever since handsets were equipped with the clock feature, handsets have been absorbing technology from different industries. This evolution has increased in pace since the introduction of the smartphone and as technology becomes better and better, more features get commoditized and achieve a good-enough status. This has caused a value migrations from the consumer electronics industry to the handset OEM industry.

8.7.2 Direction

More and more features are being put into the mobile phone and thus value is captured by the handset industry. The features are, as mentioned, technology and value from other industries so the value flow is between industries.

8.7.3 Accelerators and decelerators

This value migration is driven by the fact that technology achieve a good-enough status. When a product achieves a good enough-status, value is moved towards suppliers and/or new entrants, and the product often becomes modular (Christensen et al., 2001). Due to the high “competition of the pocket”, the fact that handsets still are able to include more features is accelerating the value flow towards the handset OEM industry.

As the case has been with many of the value flows in this thesis, by adding novel activities, the mobile industry has been able to innovate their business model and increase its value flow. By linking camera and internet connectivity (the ability to share pictures) and GPS with mobility, (always carry navigation tools with you) the mobile industry has been able to absorb value. The convenience of having all these tools in a single device has accelerated the value flow.

Chain of causality:

1. It is convenient to have all your features (if those features are good-enough) in one device...
2. ...if that device is mobile... (since you have paid for the features, it is nice to be able to use them as often as possible)
3. ...and is equipped with the highest prioritized feature...
4. ...which is connectivity...(being able to contact other people and extract information is more vital than being able to take photos)
5. ...which is why the handset has absorbed the other technologies and not vice versa.

This also has to do with the modularity and good-enough status on the different industries. It is much easier for a handset OEM to equip their products with a camera than it is for a camera company to equip their products with a phone feature. The camera as a component has thus become modular, along with the GPS, the alarm clock etc.

8.7.4 Outcomes

The outcome of the value migration due to technology absorption is:

- Nine of ten pictures are taken from a mobile phone
- The sales of internet devices have tripled in the last four years. However, PC sales have been stable and all the growth has been captured by handsets.
- Although the sales of smartphones are higher than PC sales, PC still accounts for 84% of all web traffic.
- Since this evolve many different companies and those companies tend to have multiple business designs, the value migration ratio does not say anything of significance.

8.8 Cross-case analysis

8.8.1 Department's percentage of total revenue

If we look at the recipient of value flows as business designs, they can be translated as a department within a company consisting of several different business designs. Within those companies, business designs (departments) that have received an inflow of value has increased in revenue relatively to the rest of the departments and vice versa. This trend has been observed in Apple (mobile phones) ↑, Samsung (mobile phones) ↑, Nokia (mobile phones) ↓, Garmin (automotive/mobile) ↓, TomTom (consumer) ↓, Sony (digital imaging) ↓ among others. This can be an interesting aspect to add to the value migration theory as a way to identify past value flows.

8.8.2 Differentiation and competition across and between platforms

As earlier stated, the most prominent differentiation in handsets is the OS and its ecosystem. This gives Apple the opportunity to charge a premium price compared to the price of an Android device, both built on the same/similar hardware components. Appose to the competition and differentiation between iOS and Android, it is interesting to look at on what basis Android devices can differentiate and compete against each other. Samsung, the most successful of all Android selling handset OEMs, are actually unique in that matter as they, unlike other Android selling handset OEMs, are making a profit. They can achieve this because of their fast time-to-market, strong brand and unique value chain. Apart from what

Samsung is doing, it is very hard for Android selling handset OEMs to differentiate and capture value.

8.8.3 Value allocated in platforms and ecosystems

Both Android and iOS have gained value by functioning as a distributor of content, having the billing relationship with the customers. The value that Google and Apple have invested when created the platforms are covered for in different ways. Apple charge their customers directly by including it in the premium price tag they have on their phones whereas in Google's case, the ad business covers the costs of developing the OS.

8.8.4 Value migration ratio

The value migration ratio has confirmed our empiric results in all of the cases, which is illustrated in figure 8.3. All companies with a ratio above 2.0 have, according to the empiric result, experienced a value migration inflow. Nokia, with a ratio of 0.8 or less has, according to the empirics, experienced a value migration outflow and Amzon has been in between those two lines and has, according to our empirical findings not experienced a value migration in or outflow.

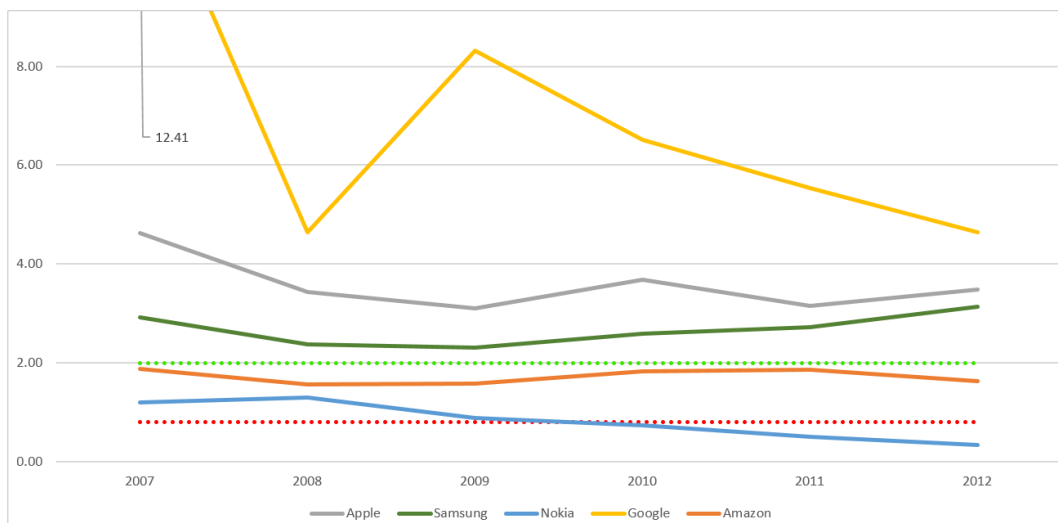


Figure 8.3 Value migration ratios (Annual reports)

To better understand the ratios and how they move over time, we have looked at which factors that stipulates the ratio, illustrated below. Slywotzky chose revenue as a relative measure to make companies comparable in size. The market capitalization measures the power of a business design to create and capture value which in turn partly depends on the revenue (Slywotzky, 1996). Thus, a change in the value migration ratio depends on how

much of a change in revenue that is reflected in the market capitalization. For example, if both revenue and market capitalization increase with 10%, the ratio will remain unchanged. Consequently, a company can receive a higher ratio with decreasing revenue, given that the market capitalization decreases less in relation to the revenue.

$$\text{Value migration Ratio} = \frac{\text{Market cap.}}{\text{Revenue}} = \frac{\text{No. of shares} \times \text{stock price}}{\text{Volume} \times \text{ASP}}$$

The same reasoning can be applied to the revenue's factors, ASP and volume, where changes in ASP directly impacts revenue and indirectly changes market capitalization due to changed evaluation of the business designs ability to create and capture value.

9 Conclusion

9.1 Academic contribution

We believe that Slywotzky's (1996) theory on value migration lacks focus on what triggers a value flow. We have with our value flow framework created a framework that emphasizes important aspects that triggers value flows such as business model innovation and disruption. With the trigger established, it is much easier to determine the direction of the flow and on which industry level it occurs. From existing theories, we have also further enlightened what accelerates and decelerates the value flow.

The theories mentioned during the accelerators and decelerators does not focus on value migration per se. However, we have put them in a new context where they help us to identify the magnitude of the value flow and they also show what kind of tools that companies can use in order to control value flow. It is important to draw a line between the accelerators and decelerators that the given company can influence and the ones that are set by the industry or product. Network externalities makes platforms grow exponentially, and that is a good thing if you are leading the platform race but it could be devastating if you are a slow starter.

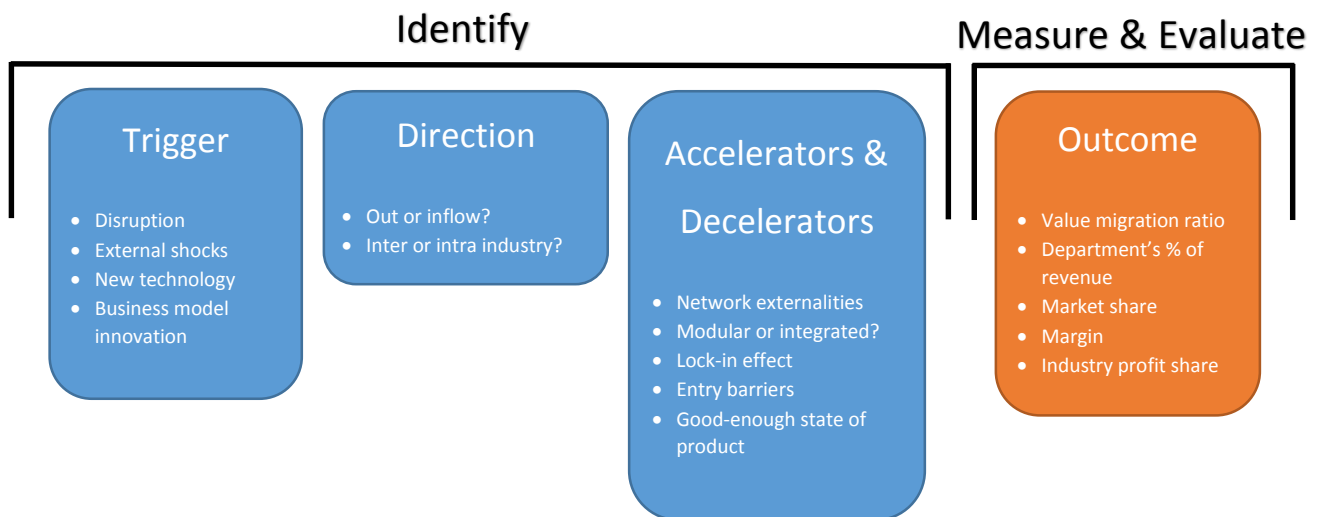


Figure 9.1 Value flow framework

After the identifying process is completed, it is important to measure and evaluate what effect the value migration has had. We have applied the value migration ratio on several

companies during the case study and on every company it confirmed our empirical results. It is also of interest to look at other financial figures in order to further measure the value flow.

When we used this framework we also saw a strong correlation between the relative size of the department's revenue (that was exposed to the value flow) compared to the total revenue and the direction of the flow. This is a simple tool that can be used to identify past value flows.

9.2 Empirical contribution

9.2.1 Intra industry empirical contribution

Our intra industry empirical contribution is illustrated in the infograph on next side. In the infograph, we illustrate the biggest and most prominent changes in the industry between the handset OEMs Nokia, Apple and Samsung between the years 2009 and 2012. Before 2009, the smartphone definition was not entirely clear and therefore the labels have differed, even though the same trend visible below started earlier. We have mapped the important changes in the industry and this information can be both helpful and useful for stakeholders of the industry. The main cause of this value migration is that the base of competition has shifted from product performance to flexibility, differentiation and speed which in this industry means ecosystem, brand and time-to-market. By high-lightening this shift, managers in other industries can learn and become extra observant so that the time of reaction becomes shorter.

9.2.2 Inter industry empirical contribution

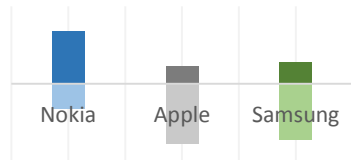
The asymmetric business models and the two-sided platforms have proven to be a cause of value migration. This is a natural cause of their nature, since resources is spent in one end and value is absorbed in the other, and if these parts operate in different industries, value migration has to happen.

Nokia, Apple and Samsung

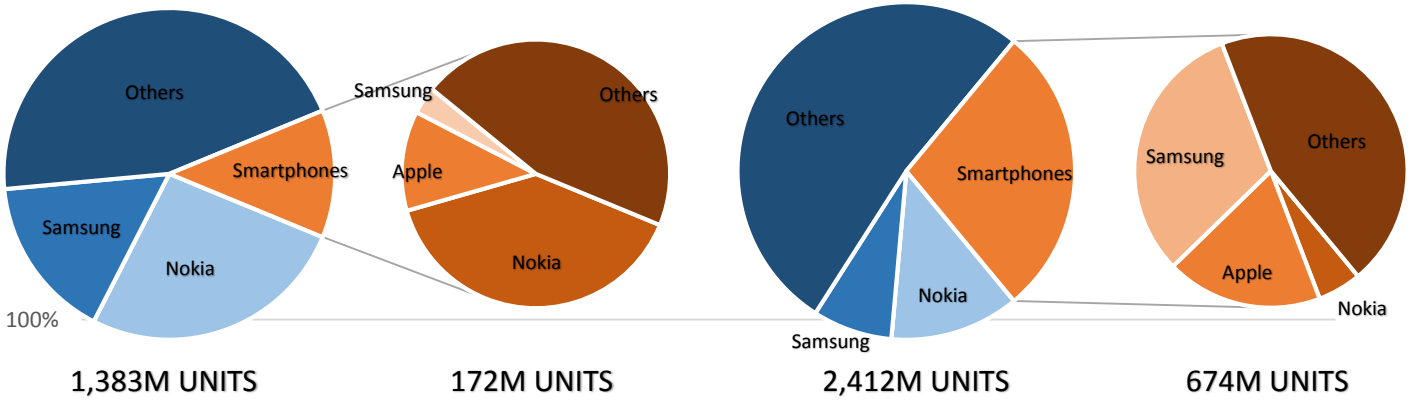
2009

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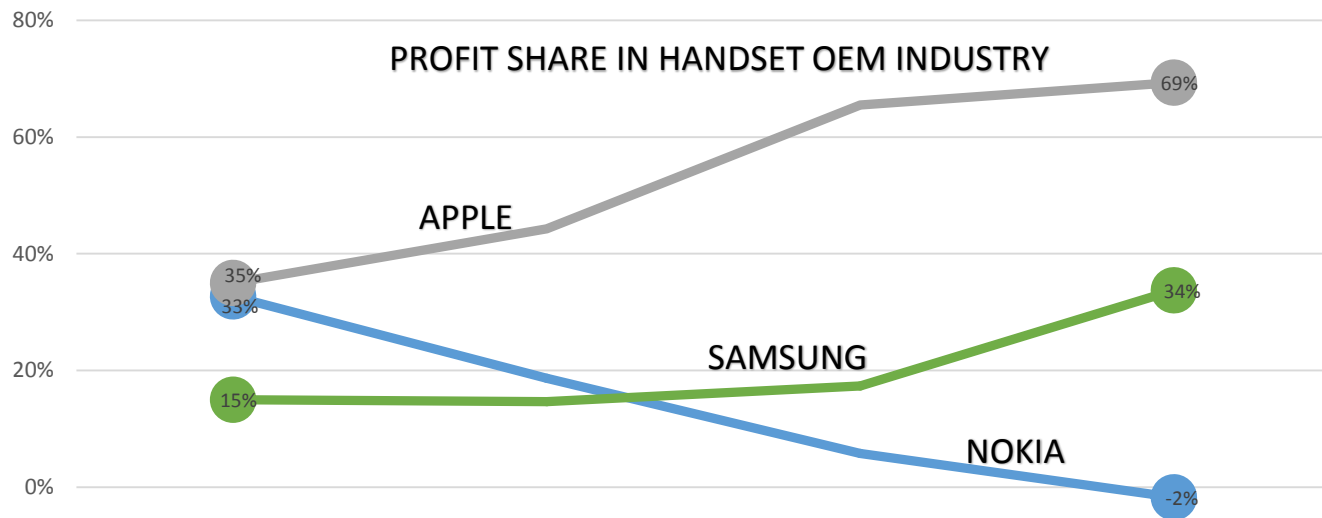
MOBILE DEPARTMENT'S SHARE OF TOTAL REVENUE



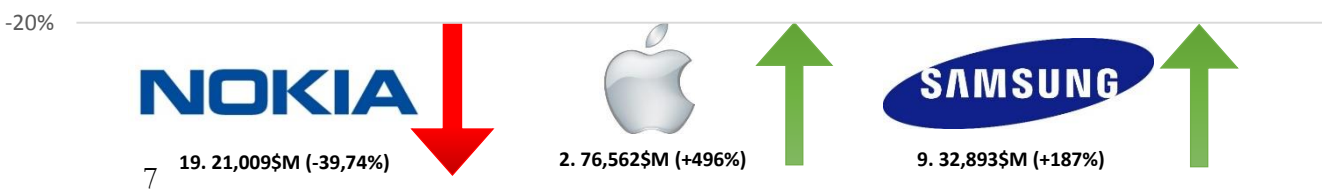
FEATURE PHONE AND SMARTPHONE SHIPMENT



PROFIT SHARE IN HANDSET OEM INDUSTRY



2012 BRAND RANKING



9.3 Further research

This thesis has not only rendered in answers and understanding, it has opened up for more interesting studies. During our research we have encountered many interesting subjects and phenomenon that could be the foundation for another thesis. Here are the topics we would suggest for further research.

A quantitative study on the correlation between the relative size of the department's revenue (that was exposed to the value flow) compared to the total revenue and the direction of the value flow. During our research this was one of the patterns that we saw correlated strongly to value migration and this phenomenon has not been mentioned at all in any of the theory that we have gone through. Although we saw a strong pattern, a quantitative study must be done to solidify the validity of this finding.

Research if the value flow framework is applicable to other industries and other cases. Our value flow framework has been an excellent tool to map and analyze value migration and it would be interesting to see if it is applicable to other industries. The framework would probably need to be revised a number of times before it is usable in all cases and environments.

Examine if asymmetric business models and two-sided platforms between industries always result in value migration. This is also a strong pattern that we saw which could work as a research question in another thesis. It lies in an asymmetric business models nature to operate in between industries (hence the word asymmetric) but is it possible to have an asymmetric business model without creating a shift in value?

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11 Appendix

11.1 Article

Our article is based upon the design of online news site <http://www.svd.se/naringsliv/>

The Bloodbath in Mobile

In just four years, Apple has absorbed almost 70% of the handset OEM industry's profits. The rest is captured by Samsung, now the biggest handset OEM with a volume of almost 400 million units. What happened to Nokia? [INFOGRAPH]



Tim Cook presenting the new iPhone 5.

FOTO: ERIC RISBERG/AP

21 May 2013 CET 10:41 , updated: 21 May 2013 CET 10:55

The shift of power has happened fast and in just four years, Apple has been able to capture astonishing 69% of all profit in the industry. Back in 2007, Nokia was the company holding 70% of all the profit. Now they are making a loss.

According to industry specialists Viktor Lundqvist and Erik Lundin, this has to do with the shift in the basis of competition.

– Back pre-iPhone, the basis of competition was product performance. This has shifted to flexibility, brand and time-to-market. Nokia did make the best phones, but along with the smartphone trend, ecosystem has replaced performance as the most important factor.

The iPhone operating system, iOS, with the ecosystem platform App Store is what matters. What about Samsung?

– Samsung is different. Their unique role as key supplier to the iPhone gave them a head start. Their component making gives them two competitive advantages; fastest time-to-market and value capturing along a bigger part of the value chain. They are also the ones that spend the most on brand building.

Nokia has tried to build their own ecosystem but without success.

READ ALSO [Smartphone Hackers](#)

READ ALSO [Top 10 Real Estate Stars](#)

READ ALSO [SocGen's Darkest Secret](#)

Attacks from other industries, are also a part of the new landscape of mobile. Retailer Amazon has launched their Kindle, a heavily subsidized line of tablets as a way to attract traffic to Amazon.com. Google provides Android for free in an attempt to increase their ad revenue on the expenses of the operating system parts of the mobile industry, which is now completely commoditized.

On the other hand, smartphones has changed the way we use other consumer electronics. Today, 9 out of 10 pictures are taken by a phone.

–The connectivity and smartness found in a phone makes cameras and GPS devices more attractive to use.

READ ALSO [The Viking Economy – A Tale of the Nordic Countries](#)

READ ALSO [What You Didn't Realize About UFOs](#)

The future of Nokia remains unknown, and CEO Stephen Elop recently suggested that we might see a Nokia Android device in the future. As for now, sales of Nokia Windows Phone devices have been disappointing with only a sixth of Samsung's volume in comparison.

Quiz! What Do You Know About the Dollar?

Nokia, Apple and Samsung

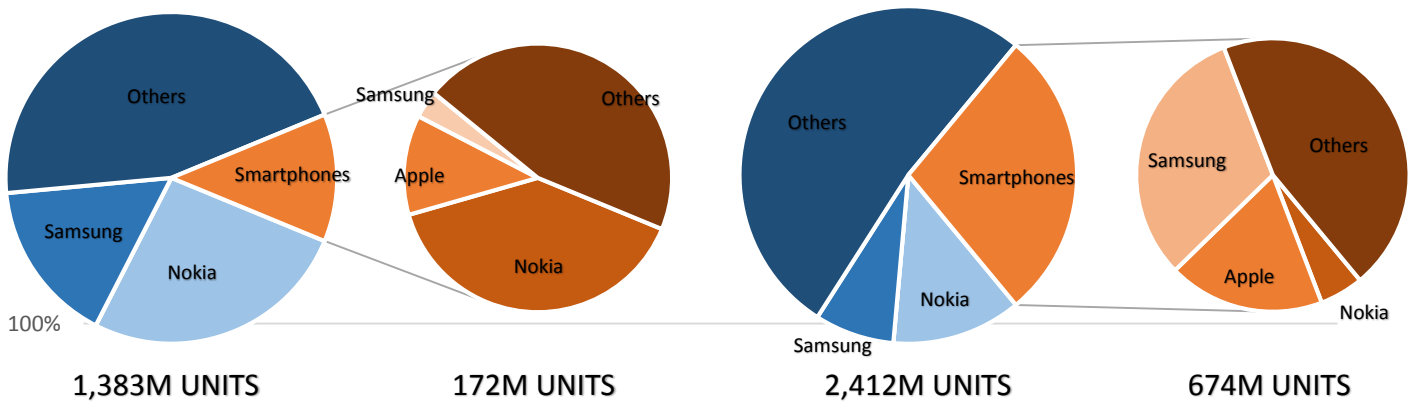
2009

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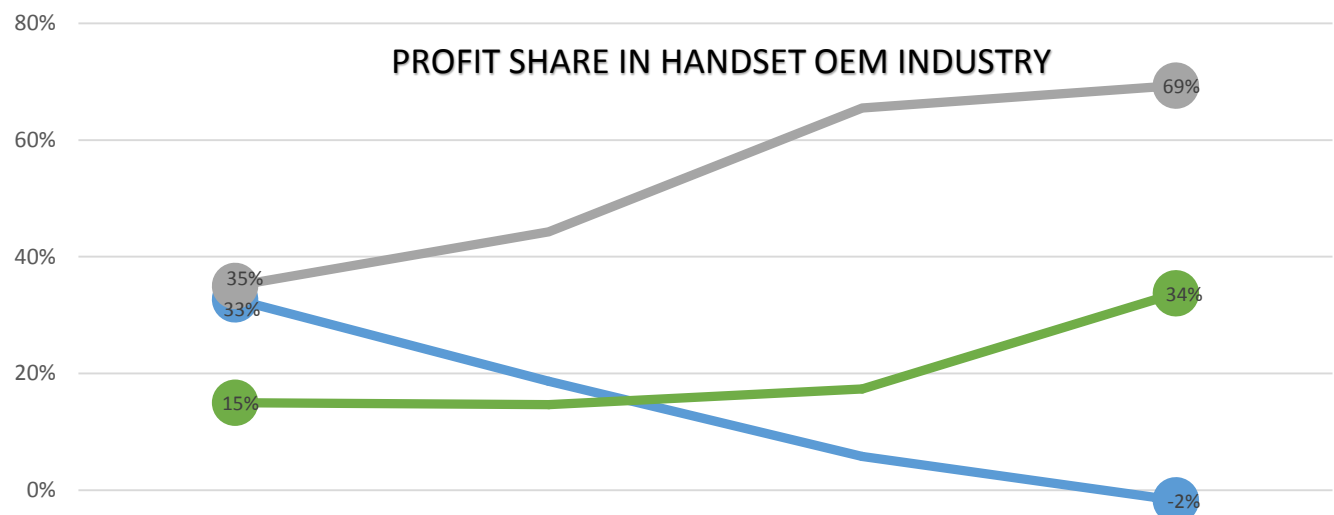
MOBILE DEPARTMENT'S SHARE OF TOTAL REVENUE



FEATURE PHONE AND SMARTPHONE SHIPMENT



PROFIT SHARE IN HANDSET OEM INDUSTRY



2012 BRAND RANKING



11.2 Value migration ratio

