LUND UNIVERSITY
School of Economics and Management

A Journey in the Smartphone Landscape

- ***How and Why Market Shares are Moving Between Different Smartphone Platforms.***

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Sammanfattning

Examensarbetets titel: A journey in the Smartphone Landscape – How new platforms are driving Value Migration in the Smartphone Industry.

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Handledare: Allan T. Malm, Fredrik Häglund

Fem nyckelord: Smartphone, Value Migration, Plattformar, Landskap, Value Propositions.

Syfte: Syftet med uppsatsen är att beskriva och analysera det nuvarande Smartphonelandskapet. Vi tänker analysera, hur och varför marknadsandelar förflyttar sig mellan de olika Smartphoneplattformarna.

Metod: Detta är en kvalitativ studie som kartlägger smartphone marknaden med hjälp utav små fallstudier. Med hjälp av modeller för Value Migration, sekundär och empirisk data, så har vi utvecklat ett teoretiskt ramverk som skall hjälpa läsaren att förstå det nuvarande läget på Smartphonemarknaden.

Teoretiska perspektiv: Business models, Value Migration, Value propositions, Strategy canvas och Ecosystems.

Empiri: Vi har genomfört sex stycken strukturerade intervjuer med personer som i sina olika arbetsområden har god insikt i Smartphonemarknaden.

Slutsatser: Vi har funnit Smartphone industrin att vara en snabbt växande, mycket komplex, och snabb förändrande industri. Industrins konkurras landskap består av olika typer av aktörer som utöver annorlunda inflytande på industrins utveckling. Vi har funnit det svårt att specificera mellan vilka plattformar som marknadsandelar förflyttar sig. Dock så tror vi att Android åtnjuter inflöde av värde från alla andra plattformar på marknaden. Men, kanske inte lika mycket från Iphone iOS som från Windows Phone 7/Windows Mobile, Blackberry och Symbian. Generellt sätt så kan vi dra slutsatsen att alla plattformar i värde utflödes faser verkar ha ett gemensamt problem, bristen på applikationer.

Abstract

Title: A journey in the Smartphone Landscape – How new platforms are driving Value Migration in the Smartphone Industry

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Course: Master thesis in business administration, Major in Strategic Management, 15 University Credit Points (15 ECTS).

Authors: Max Pihlqvis, Carl Sundqvist and Wilhelm Steien

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Five key words: Smartphone, Value Migration, Platforms, Landscape, Value Propositions

Purpose: The general purpose of this thesis is to describe and analyze the current competitive Smartphone landscape. Furthermore, we intend to analyze how and why market shares are moving between different Smartphone platforms.

Methodology: This is a qualitative study, which identifies the Smartphone market with the help of mini case studies. We have developed a theoretical framework that will help the reader to understand the current state of the Smartphone market. This has been achieved by studying different theories, secondary and empirical data.

Theoretical perspectives: Business models, Value Migration, Value propositions, Strategy canvas and Ecosystems.

Empirical foundation: We have carried out six interviews with people from different working areas, who have good knowledge about and are initiated regarding the Smartphone market.

Conclusions: We have found the Smartphone Industry to be a fast growing, immensely complex and rapidly evolving industry. The Industry's competitive landscape consists of various types of actors, all exercising different influence on the industry's development. We have found it hard to specify between which platforms market shares are moving. However, we believe that Android is enjoying value inflow from all platforms on the market. Although, probably not as much from Iphone iOS as from Windows Phone 7/Windows Mobile, Blackberry OS and Symbian. Generally, we can conclude that all platforms currently in value outflow seem to have at least one mutual problem, the lack of applications.

Foreword

For ten weeks we have been working on this Master Thesis in Strategic Management at Lund University, School of Economics and Management.

We are very grateful for the advice and support that we have received from people around us.

We have received valuable suggestions and expertise from Allan T. Malm and Fredrik Häglund, who have been of great support to us during this time, providing valuable comments and guidance.

We would also like to express our gratefulness to everyone who agreed to be interviewed: Johan Larsson from the magazine Mobile Business; Andreas Constantinou from Vision Mobile; Richard Hægermark from Dell; Peter Wissinger from Microsoft; Claes Ericsson from Google and Irfan Khan from Telenor. Without you, there would hardly have been any thesis.

Lund, January 2011

Max Pihlqvist Carl Sundqvist Wilhelm Steien

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Explanation of Key Concepts

Applications – Software programs developed for Smartphones

Feature phone – Low-end phone, consisting of fewer computer abilities compared to a Smartphone.

Platform – An Operating System for a Smartphone

Original Equipment Manufacturer – The end of the line company that puts the final product together before delivering it to the market

OS – Operating System, software which enables an easier usage of computers

Smartphone – A phone that consists of an OS that is constructed as a programmable platform which enables outside developer programs and customization by the user

Ownership of Operating Systems

Apple – iOS

Google – Member of the Handset Alliance which owns Android OS

Nokia – Symbian OS

Microsoft – Windows Mobile and Windows Phone 7

Research In Motion – Blackberry OS

1. Introduction

In this chapter we will present an introduction to the Smartphone industry and its competitive landscape. The chapter also presents the question at issue and the purpose of this thesis.

1.1 Background

"Android has triggered more changes to the mobile industry than anyone had imagined" – Lead innovate or assemble, Constantinou, 2010

A transition appears to be going on in the Smartphone landscape, the old mobile phone manufacturers like Nokia and Sony Ericsson might become increasingly challenged by manufacturers with value propositions that better satisfy customers' priorities. Apple, Research In Motion (RIM) and Google are all good examples of this; they have changed the market conditions for all players. RIM, Apple and Google seem to have conquered large pieces of the mobile market from the original (old) equipment manufacturers (OEM´s) Ericsson, Nokia, Motorola, Samsung and LG (Q3 Gartner.com), in 2009 considered to be the top five (Lead innovate or assemble, Constantinou, 2010). At the same time, it appears that the choice of Smartphone platform has become critical for manufacturers as well as customers. Google's Android Platform seems to have revolutionized the industry and opened up the market for new, low-cost manufacturers.

The economics of value might have changed due to platforms' ever-increasing importance in the mobile industry. This new focus on platforms appears to be driving large market share changes between different platforms. Actors such as Google and Microsoft may even have started a replication of the PC-industry and set the old rules and roles out of place. (Constantinou 2010-11-11)

In this thesis we are going to analyze how and why market shares are moving between different platforms by using various theories such as Value Migration and value propositions.

1.1.1 What are Smartphones and Platforms?

There is no standard definition of what a Smartphone is. Ericsson, in 2001, defined a Smartphone as a mobile phone which contains elements from a Personal Digital Assistant (PDA). It includes an address book, calendar, e-mail and messaging functions and wireless connectivities. A Smartphone is almost the same size as a normal mobile phone, but with a larger touch screen enabling extra functionality. (The R380s, Steve Bridges, 2001) Wordiq.com has the same definition as Ericsson but points out that the key feature is that a Smartphone can install applications that are developed by the phone company, an operator or a third party software developer. For a Smartphone to install applications, the device needs to contain a platform.

There are several definitions of what a platform is; generally it could be defined as: *products and services which arrange groups of users in two-sided networks* (Eisenmann et al 2006).
However, in this paper we are only interested in software platforms.
Another general definition of such platforms would be: *"a platform is a system that can be programmed and therefore customized by outside developers – users - and in that way, adapted to countless needs and niches that the platform´s original developers could not have possibly contemplated, much less had time to accommodate".*- programmableweb.com
This can be summarized by: "*if you can program it, then it is a platform. If you can´t, then it´s not."*- programmableweb.com
Furthermore, we will make no distinction between Smartphone platforms and OS in this thesis. Accordingly, we will regard a Smartphone as: *a device that consists of an OS that is constructed as a programmable platform which enables outside developer programs and customization by the user*.

1.2 Problem Discussion

1.2.1 The Smartphone Industry

The Market Today

In the third quarter of 2010, 417 million mobile phones were sold, 19,3 % of these were Smartphones, an increase by 96 % compared to last year. (Gartner.com, Q3) Market shares are also shifting rapidly between platforms. The shifts in market shares between 3Q of 2009 and Q3 2010 show that: Symbian has decreased from 44.6 % to 33.6 %; Android has increased their market share from 3.5 % to 25.5 %; Windows Mobile has decreased from 7.9

% to 2.8 % and Iphone iOS has by large kept its share at 17 % (Gartner.com Q3). Hence, it seems like there is an ongoing struggle for market shares between the different platform developers. (For more info, see attachment 1)

Key Manufacturers

For several years, the top 5 OEM´s have been Sony Ericsson, Nokia, Motorola, Samsung and LG. These are now sharing the market with RIM, Apple, Dell and Huawei and might soon be accompanied by even more low-price manufacturers from Asia. At the same time, profits are moving around in the Industry, where in the first half of 2010, Apple had 2.8 % of the worldwide market share but 39 % of the profits (cnn.com). This posts a huge threat to the old top 5 OEM´s market shares and profits; which is leading the industry into a quite different landscape to the one they were used to navigating.

Key OS Developers

During recent years there have been speculations that one dominating OS will prevail in a standards race, however, those thoughts are now being largely abandoned. It seems more like there is a battle for market shares, which implies that there is room for multiple platforms on the market. Apple together with RIM and Google seem to have taken large market shares from the old top five manufacturers.

Nokia together with Intel will during 2011 release their new OS, MeeGo, although some argue that it might be too late (Symbian is Dead, Constantinou, 2010). Microsoft has recently released their Windows Phone 7 (WP7) which is a completely new OS. Consequently the platform manufacturers seem to be taking control of the market, which used to lie in the hands of manufacturers.

Operators Role in the Industry

Network operators appear to view Android as a savior from the two dominant players, Apple and RIM. It seems like Operators for quite some time have tried to dominate the phone manufacturers by, for an example, working with Windows Mobile and HTC in 2002 in order to decrease their dependency upon Nokia. (Lead, innovate or assemble, Constantinou, 2010) It is not certain if operators are able to sustain their power much longer; RIM and Apple are growing and Android might be getting into such a strong position that they might be able to dictate orders from operators. In the meanwhile, mobile technology is still developing fast,

where in a foreseeable future consumers might not even need operators and could instead use voice over IP (internet telephony).

Applications' Role in the Industry

The mobile industry seems to have been largely affected by mobile applications, something which has almost occurred from the blue in 2009 ("Smart" apps, James Parton, 2010). Last year, 7 billion applications' were downloaded and applications is a sector estimated to generate 17.5 billion dollars in revenues 2012 (readwriteweb.com) compared to 4.1 billion today ("Smart" apps, James Parton, 2010). Mobile applications appear to have changed the mobile industry, giving people more freedom but also created a new way for companies within the industry to create value for customers. This could especially be a business opportunity for operators, who could use their infrastructure to create an own applications store, thereby becoming very central in the next generation of "intelligent" applications that are soon likely to come ("Smart" apps, James Parton, 2010). Currently, it looks as if only the platform owners are the ones offering applications.

1.2.2 Problem Formulation

As discussed above, the Smartphone industry is in a phase of transition. New platforms have started to affect the Smartphone landscape, moving market shares between companies within the industry. New market conditions, where customers seem to prioritize new types of factors on platforms, appear to have made old platforms value propositions outdated. This leads us to the question at issue: *How and why are market shares moving between different platforms in the competitive Smartphone landscape?*

1.3 Purpose

The general purpose of this thesis is to describe and analyze the current competitive Smartphone landscape. Furthermore, we intend to analyze how and why market shares are moving between different Smartphone platforms.

1.4 Subject's Relevance

The Smartphone industry is in a phase of transition. This means that rapid changes are taking place as we are writing this thesis. This could be seen as both favorable and problematic. It is favorably in the sense that it makes our thesis very current and subsequently relevant to present-day readers. Yet, it could also be seen as problematic since it makes eventual results short-lived in their relevance.

1.5 Previous Research

The Smartphone industry is under constant analysis from different directions and quarters. Industry consultants, industry journalists and company analysts continually try to make projected forecasts of the future landscape, with varying success.

Studies have been made on platform competition such as *"Operating System Battle in the Ecosystem of Smartphone Industry"* written by Fienda Lin and Weiguo Ye in 2009 and the 2005 article, *"The Boundaries of the Platform: Vertical Integration and Economic Incentives in Mobile Computing"* by Kevin Boudreau. However, the industry landscape evolves rapidly and therefore such studies quickly become outdated, at least to a certain degree. Furthermore, we believe that our Value Migration and Value Proposition focus will offer a somewhat new approach to this subject.

1.6 Disposition

Chapter 1.

In this chapter we will present an introduction to the Smartphone industry and its competitive landscape. The chapter also presents the question at issue and the purpose of this thesis.

Chapter 2.

The methodology chapter describes our approach, and discusses the considerations we made about the choice of methods and theories. It also contains a description of how we have collected the empirical data, and reflections regarding possible weaknesses in this procedure.

Chapter 3.

In this chapter we are going to discuss the different theories that constitute the theoretical framework. We will also elaborate on some of the practical issues with these theories. This chapter is divided into theories in the background, value theories and theoretical framework.

Chapter 4.

In this chapter we are going to give the reader a quick background on the evolution of the Smartphone industry. Subsequently, the current Smartphone landscape will be described and analyzed on a more general level.

Chapter 5.

In this chapter we are going to discuss the new focus on Smartphone platforms, how value seems to be migrating between different platforms and attempt to explain why value is migrating in these directions.

Chapter 6.

In this final chapter we will present the most important results discovered in the thesis.

2. Methodology

2.1 Introduction

The methodology chapter describes our approach, and discusses the considerations we made about the choice of methods and theories. It also contains a description of how we have collected the empirical data, and reflections regarding possible weaknesses in this procedure.

2.2 Overall approach

There are several ways of approaching research in the social sciences; however, it can all be divided into qualitative and quantitative research methods (Holme, Solvang, 1997).

Our intentions are to analyze; how and why market shares are moving between different platforms in the competitive Smartphone landscape? In order to manage this task, we will collect percentage numbers of the different platforms' market shares, and their changes during the first three quarters of 2010. Through this information we will be able to identify the current market positions of the different companies and how these have changed during 2010.

We will interview analysts in the industry, read secondary data and use relevant theories, in order to form an interview guide will be adapted to the current climate on the Smartphone market. We will then carry out five interviews. With the help of the empirical data collected, different theories, and secondary data, we will identify a couple of principal industry factors that determine a customer's buying habit.

We have come up with a couple of questions in order to decide which methodology that should be used in order to optimally approach the subject in question.

- *How do we research in order to get the fairest picture of this matter?*
- *What do we want to cover in the empirical chapter?*
- *How do we collect this information?*

2.3 Methodology Discussion

How do we research in order to get the fairest picture of this matter?

In order to answer this we have to collect as much information as possible from each company. We will contact several representatives of different companies as well as mobile-phone analysts with regard to gathering as much information as possible, because we want to let as many actors of the industry to have their say on the current landscape.

The quantitative research method is used when there is little information about many aspects on the subject at hand. The scientist covers the subject in width, with structured surveys etc. Holme and Solvang (1997) describes that the main feature of the quantitative methodology is that it transforms the information into numbers and amounts, to be able to carry out statistical analysis.

The qualitative approach however, is more focused on a high level of information about the subject and fewer units to research. The qualitative approach puts the researcher's interpretation of the information in the forefront. The common denominator of the information collected under the qualitative approach, is that the researcher cannot and should not transform it into numbers. (Holme, Solvang, 1997)

Hence, as the Smartphone industry releases ample information that is easily available and consists of quite few major actors, we have chosen a qualitative approach in our thesis. The qualitative research method is focused on a close relationship between the researched objects. It is also to be recommended when one has a small number of subjects to research. However, we are, to a certain degree, going to combine this with a quantitative approach, through the use of statistic data and diagrams. We are going to study several different companies as case studies. Case studies are very useful in qualitative research method, and of high importance when it comes to investigating a limited number of objects in several dimensions (Holme et al 1997).

When one is to write a thesis, another decision of major importance is if you are to work with inductive or deductive reasoning. The deductive reasoning is based upon the presumption that the authors have previous knowledge about the subject and already have decided a path upon which they want to accomplish their study, and that they have an idea about what conclusion they are going to come to in the end.

The inductive reasoning however, is applicable when the researchers have an open relationship to the subject they are going to study. The inductive researchers are trying to study without any limitations emanating from previously defined hypotheses and knowledge. The inductive reasoning seems to be the idealistic way to approach a subject, i.e. in order to get the most impartial picture. However, there are some critics against the inductive reasoning. These argue that no one can approach a subject with a totally open mind.

Our study will be built on inductive reasoning. This is natural, as we do not have much previous knowledge about the industry. Moreover, our goal is to analyze the current Smartphone landscape from as much information as possible, and to do this with open minds without any prejudices.

Our study will be based mainly on what people have said, written, thought and done. This makes our study hermeneutical. The contrary is positivistic studies, which is most commonly applied in the natural sciences. (Lundahl et.al 1999).

2.3.1 The Selection Process

What do we want to cover in the empirical chapter?
We will present a number of mobile platform companies, in a series of mini cases.

We have identified some of the biggest manufacturers and platform makers (according to gartner.com), which will be our focus in the thesis. The manufacturers are: Apple, RIM, DELL, Nokia, HTC, Sony Ericsson, LG, Samsung, Motorola, ZTE and Huawei. The platforms are: Windows Phone 7, Android, Symbian, Blackberry OS, iOS, Meego and to some extent Linux.

By presenting them as mini cases, we will be able to give the reader the opportunity to get a view of the historical background of the respective companies, as well as the different connections between them. The mini cases will be essential in regards to getting the whole picture of the industry and to connect the fluctuations in relations between the manufacturers and the software companies.

The primary data that we are going to use will be extracted from interviews. We will make informant interviews, where the interviewee is independent, but has good knowledge about the subject in question. We will also make respondent interviews, where the interviewee actually is a part of the industry (Holme et.al 1997). The mix of informant and respondent interviews will probably give us a more realistic view on the subject. We are going to

interview journalists and analysts, as well as representatives from both the platform companies and the manufacturers of Smartphones. Thus we can analyze the companies' arguments in relation to what the independent analysts have to say.

The secondary data will be retrieved from various sources such as, books, articles, and electronic sources. Furthermore, the data that will be used in the Value Migration Analysis have been explicitly downloaded from Gartner.com (see Attachment 1). This data on market shares are based on worldwide Smartphone sales. Hence, it does not take into consideration the different Smartphones profit margins. Since we are interested in market shares in regards to why customers want to buy a certain platform, we believe the number of Smartphones sold are the best measure for this.

2.3.2 The Interview Technique

And how do we collect this information?

There are several choices to be made when it comes to how to carry out the interview. There are two types of interviews, the structured and the unstructured. The structured interview is where the interviewer has made a clear goal with the interview in advance. The questions are well prepared as well as systematically asked in the same order in every interview, to avoid any deviations on how the questions are perceived by the interviewee (Lundahl et al 1999). We are going to cover several companies and perform several interviews with both companies and independent analysts with a high degree of knowledge about the industry. It is of great importance to ask the same questions to everyone in order get comparable responses, so that we can use the answers as instruments to probe how the interviewee looks upon the current situation in the industry. However, since we are rather new to the subject, we will start the project by making one unstructured interview with an independent industry analyst in order to attain a better overview of the industry. The unstructured interview method is more like an open conversation between the interviewer and the interviewee (Lundahl et al 1999). Following this interview, general secondary data collection and the evaluation of different theoretical aspects we will be able to formulate a relevant interview guide to be used in the following structured interviews.

We will carry out five structured interviews in preparation of our thesis, two via email and three via telephone. The positive aspect of email and telephone interviews is that it more or less eliminates the risk of interview effects. When one does not meet each other face to face, the risk of affecting the interviewee is significantly reduced. An identical email will be sent

out to all interviewees, so that they can read the questions and reply with written answers, or by telephone.

To identify and approach interesting interviewees for our thesis, we will make substantial research through the Internet as well through studying multiple articles and other literature. We have received valuable help from our mentors, Dean Allan T. Malm and PH.D Candidate Fredrik Häglund, who have given us several useful hints with regard to finding the right people to interview for our thesis. We will try to find interview objects from different sectors in the industry, and in this way we will manage to acquire the optimal information about the industry. The following individuals will be interviewed, categorized by industry sector:

- **Journalist**

  Johan Larsson, Editor, Mobile business, 2010-12-13 - by email

- **Analyst**

  Andreas Constantinou, Research Director, Vision Mobile, 2010-11-11 - in person

- **Manufacturer**

  Richard Hægermark, Nordic Product Manager, Dell, 2010-12-07 – by phone

- **Platforms**

  Peter Wissinger, Nordic Business Unit Director Windows Phone, Microsoft, 2010-12-17 – by phone

  Claes Ericsson, Account Manager, Google, 2010-12-22 – by phone

- **Operator**

  Irfan Khan, Vice President and Head of Corporate Development Group, Telenor, 2010-12-15 – by email

2.3.3 Validity and Reliability

Lundahl et. al. defines validity as the absence of systematic measurement errors. This concept can split into inner and outer validity. The inner validity is achieved when, as in our case, the questions on the interviews are measuring what they are supposed to measure. This occurs when there is high compliance between the theoretical and operational definition. The outer validity, on the other hand, is based upon to which extent the answer from the interviewees deviate from the truth. It is possible that the interviewees will sometimes experience difficulties when interpreting a question. We will, when notified, try to explain this as evidently as possible. However, one cannot completely guarantee that no one will interpret a question in the wrong way, or deviated from the rightful answer.

The reliability is described by Lundahl et al (1999) as the absence of random measurement errors. A survey with good reliability is a survey where the outcome is not affected by the people who are carrying out the survey, nor the environment in which it is performed. Our telephone and email interviews will hopefully minimize our personal impact on the interviewees. The individual have been in its working or home environment, which we think has given them extra comfort.

2.3.4 Credibility

When it comes to critique of primary data, one problem is that the interviewee could formulate his answers only to give prominence to his own company or his personal thoughts regarding the current situation and the future. However, we will interview people from companies and independent analysts, just to be able to eliminate this effect as much s possible.

All the answers will be critically examined; so that, hopefully, we will see where a beautified picture of the interviewees' own interests were painted out. This problem, however, will probably only give an interesting twist to the study, because one could always weigh the words of the different companies and analysts against each other and in this way gain a picture of, and clarify the strategy of the different actors even more.

The secondary data will be collected from several books and articles, in order to get the big picture of the subject as well as to achieve as high credibility as possible. When one is researching on such a modern and relevant topic, there are also a lot of pundits around. To get the essence out of the collected information, we have put word against word and discussed and examined the different sources critically. As the industry is changing quite rapidly, we

will be forced to update almost daily, via the Internet and specialist magazines about the mobile industry.

When it comes to critique of ourselves, our previous knowledge and preferences with regard to Smartphones could shape us when it comes to interpret the answers in the primary data. In order to eliminate this risk to the greatest extent we will try to compare the findings with secondary data and discuss these as much as possible in order to analyze them from as many angles as possible.

2.4 Creation of the Theoretical Framework

In order to understand the competitive landscape and the change of market shares between different platforms, we have studied a couple of theories within the field of business strategy. These have been generally divided into two categories: theories in the background and value theories. Theories in the background consist of theories that are fundamental within the field of business strategy. These theories are very important to understand because of their decisive impact on the general view of business strategy. The first theory in this category is often referred to as the Industrial Organization. The concept of Industrial Organization is the study of how markets function; it is very closely connected to microeconomics (Tirole, 1988). In this context, we will focus on Value Chain Theory and Porter's Five Forces. The Resourced Based View on the other hand, takes emphasis on the importance of how companies take advantage of their core competencies. It is a more recently developed theory and therefore it is often seen as the new approach to business strategy (Mintzberg 1990, 1998).

In order to be able to answer the question of why and how market shares moves between different Smartphone platforms, we have consulted various theories regarding; why value moves between companies and how customers perceive value. We believe that market shares can be seen as a type of value measure, this assumption will be explained in detail later. Consequently, if we apply theories that explain why value moves between platforms, these theories should also explain why market shares moves between different platforms. The three most central theories in this context are Value Migration, business models and value propositions. Value Migration theory states that value moves between different business models mainly as a consequence of shifting customer prioritizations, and we regard different business models as platforms. Business models consists of various elements, the most central element for our analysis is the value proposition, as it explains what value the platform offers the customer. Furthermore, the value proposition theory will be complemented by a couple of

theories that explains how customers perceive value, these theories are called ecosystems and network externality effects. Put together, these theories should help us understand why markets shares move the why they do. But it raises the question, how do they move? To answer this question we have turned to Value Migration once again, since it offers a good framework for discussing different platforms value migration status, hence market share movement status.

Figure 2.4

3. Theoretical Approach

3.1 Introduction

In this chapter we are going to discuss the different theories that constitute the theoretical framework. We will also elaborate on some of the practical issues with these theories. This chapter is divided into theories in the background, value theories and theoretical framework.

3.2 Theories in the Background

There are a couple of theories that are fundamental within the field of business strategy, it is important for the future analysis of this paper to explain their impact on the general view of business strategy. We refer to these theories as "theories in the background". The first two theories are commonly called the Industrial Organization. It includes among others: Porter's Five Forces and Porters Value Chain Theory. The third theory that we are going to explain is The Resource Based View, it is a more recently developed theory and is therefore often seen as the new approach to business strategy (Mintzberg 1990, 1998).

3.2.1 Industrial Organization

Porters Five Forces

Michael Porter (2008) describes five forces which affect the competition within the industry. The first force is the rivalry among existing competitors who are fighting in the current market and limits the industry's profitability. The other four are: the threat of new entrants; buyers bargaining power; the threat of substitute products or services and the suppliers bargaining power. All five of these forces have to be considered in order to be able to understand the overall market structure and its competition situation.

Value Chain

Porter (1985) was the first to discuss value chains. He discusses a universal framework which can be used in any business to describe how activities can be strategically improved and to assess their relative costs and their part in differentiation. Christensen et al (2001) argues that one can discover patterns where competition will be and where profits will occur in an

industry's value chain by using their model for disruptive technologies. They argue that value moves over time in the value chain. Further, they state that profits will move in the value chain to activities where the direct customer currently is not fully satisfied.

3.2.2 The Resource Based View

Wernerfelt (1984) presented the resource-based view in 1984. The theory suggests that a company should be analyzed by looking at its resources rather than its products. Most resources can be used in a number of products and products require services from a number of resources, therefore Wernerfelt argues that products and resources are two sides of the same coin. By investigating a company's resources can help you detect its optimal product-market activities.

Barney (1996) has developed a resource based model which provides companies with an overview, enabling them to easily determine what kind of resources should be further developed. It suggests that companies divide their resources into four categories: physical; personal; organizational and financial resources. The next step is to evaluate if a resource is worth developing and if it can provide sustainable advantage. In the end, it should be worth knowing whether a resource is rare, valuable, easily organized and/or easily replicated.

3.3 Value Theories

3.3.1 Value Migration

Introduction

The inventor of the Value Migration Theory is Adrian J. Slywotzky, he coined the term in his 1996 book *Value Migration: How to Think Several Moves Ahead of the Competition* (1996). Since then, there has not been much progress in terms of development of the theory itself, but rather to its area of application. Slywotzky wrote, together David J. Morrison, an article in 1999 called *Profit Patterns*, where they elaborate on what patterns to look for in order to anticipate value migration. Also, in 2006, Slywotzky et al wrote the article "*Are you enjoying globalization yet- The surprising implications for business* ", where they discuss the implications of globalization and describe it as the second modern wave of Value Migration. Furthermore, the theory has been extensively used in papers such as this thesis, where researchers try to analyze a specific industry or a technology's impact on existing business models. One example of such studies is Arun Sharma's paper from 2002 "*Trends in the Internet-based business-to-business marketing*". In this, he discusses the benefits and

problems with internet from a business model perspective. In his findings he states that firms need to use internet for their marketing, otherwise they may risk value migrating from the firm.

We have had acess to Slywotzkys book from 1996 which gives the most in-depth explanation of the theory, and since it is also the origin of the theory, we will primarily focus on its explanation of Value migration.

Slywotzky (1996) thought of value migration after having observed large, well governed companies loosing valuable customers to newer, smaller companies. Hence, he explains that the old rules of success, which states that market share and scale is the key to success are no longer valid. In his opinion value migrates from old business models to new ones that are better fit to satisfy customers' priorities (Slywotzky uses the term business design, however, we will use "business model" in order to avoid confusion). He argues that as a consequence of this reasoning, knowledge of customers' priorities becomes central for understanding the Value Migration process. Value Migration can happen to specific divisions, a whole company or to entire industries. In our case, the focus will be on the Value Migration between platforms within the Smartphone industry. Slywotzky points out that it is very important that managers understand the direction and velocity of value migration when they make strategic business decisions.

Customers' Priorities

In order to understand the direction and velocity of Value Migration, managers have to ask themselves questions like: Where in my industry will I be allowed to make profit? How is that changing? What is driving the change? What can my organization do about it? (Slywotzky, 1996)

However, these questions only touch upon the central at issue, which Slywotsky defines as: What are the changing pattern of what customers need, want and are willing to pay for, and what business model responds most effectively to this changing pattern? Customers buy products and services based upon on how they prioritize. Hence, their prioritization effectively determines to which companies' value will migrate. However, customers' prioritizations change over time, which result in shifting directions of value migration. In order for companies to continue in a state of constant value inflow, they have to continuously make accurate prognostications of customers' priorities, something which is easier said than done. Then they have to make adjustments to their business models according to these

forecasts. In conclusion, it is absolutely vital for companies to understand how customers prioritize today, and how they will prioritize tomorrow.

Three Phases of Value Migration

Slywotzky also talks about three different phases in the process of Value Migration: *value inflow*, *stability* and *value outflow*. It should also be pointed out that all business models goes through these phases; the process can be seen as business models natural life cycle. This means that different phases calls for different kinds of management; companies that are able to make suitable decisions in regard to the current situation will become winners in the Value Migration process. However, one should be aware of the fact that the Value Migration process is becoming faster than ever. As a consequence, it is harder for managers to identify these phases and predict its evolvement, which in turn makes it harder to make appropriate business decisions. Furthermore, this natural business model life cycle, which is usually driven by changing customer priorities and the introduction of new business models, can sometimes be interrupted. Events that are impossible to foresee sometimes occur, these events can throw a business between two phases almost instantly. Such events could be new innovations, regulations trade restrictions aggressive pricing etc. The most common and relevant for this thesis is probably the introduction of new innovations.

These three phases will be used in the analysis as a framework for describing different companies' situation within the Value Migration process.

Value Inflow Phase

The initial phase the value inflow; the company starts to absorb value from the industry because its business model is superior to competitors (Slywotzky, 1996). It is superior in the sense that it captures customers' priorities better than competitors. Value migration is often triggered when a new company enters the market with a new solution on how to satisfy customers, a solution that competitors often have missed or even neglected. According to Slywotzky, such companies are often identified by excitement, confidence, a spirit of conquest, strong management, capacity to attract top talent, and it has a strategic position of advantage. But international competition, shorter product life cycles and customers with good product knowledge are making the value inflow phase much shorter than it used to be.

The transition between value inflow and stability can be extremely difficult to recognize according to Slywotzky. There are few examples of good detections. Often the transition is

characterized by softening of price, increased head-to-head competition for key accounts and a modulation of the growth rate. Often management likes to explain a decrease in revenue, even after several consecutive quarters, as a consequence of "seasonal effects", "industry cycles" and "special circumstances". This could be dangerous because it fogs the tendencies towards a phase shift. Managers are often reluctant to accept that their company is slipping from the value inflow phase towards the stability phase, simply because they are still full of the confidence that they received in the value inflow phase.

Stability Phase

The second stage, stability, is categorized by Slywotsky (1996) as a combination of well matched business models in regards to customers' priorities and a general competitive equilibrium on the market. This means that volumes are high and revenues are increasing, but profits might not be growing at a satisfying speed. Customers are generally pleased with the choices that are presented on the market. But more notably, companies focus on improving those activities that have led them to success in the past. Slywotsky refers to this phase as "the comfort zone". As with the value inflow phase, the stability phase have also become shorter as a result of previously mentioned factors. The transition to the final phase, the value outflow phase, is initially very hard to spot. The problem is often that there is an inward focus which blinds the organization from picking up signals from customers and competing business designs. Often it's already too late to make evasive actions once customers' behavior starts to reflect badly on the financial statements.

Value Outflow Phase

The final phase, value outflow, is usually identified by a start of decline in company performance and market confidence (Ibid). Slywotsky state that Managers are faced with difficult decisions; often they either cut back or they keep investing in business models that are becoming more and more obsolete. However, they should instead focus on redesigning the obsolete parts of their business models as fast as possible.

How to Measure Value Migration

As the observant reader probably already has noticed, some complications normally arise when one ties to measure value migration. Normally Slywotsky recommends using companies market value divided with their revenues to establish in which value phase of the value migration process the companies are. However, this is not always possible. This is especially true when dealing with "multiple-model" companies.

"Multiple-model" companies have a variety of business models within the company. For instance, Microsoft business model for Windows Phone 7 is not the same as the one for their PC operating system Windows 7. The implication of this is that one cannot measure Microsoft's overall performance and use it to draw conclusions about Windows Phone 7's value proposition. Instead, one has to isolate windows phone 7′s performance from the rest of Microsoft. In these kinds of situations, Slywotzky thinks that one should try to follow the behavior of customers. Customers vote on value propositions every day by choosing one product over another. In our case, customers' choice of platform should be a good indicator on how different platforms are able to satisfy customers' priorities. Their "votes" could highlight platforms that are significantly superior (value inflow), roughly equivalent (stability), or dangerously inadequate. Shown in above, is an illustration of these three stages constructed by Slywotzky (figure 3.3.1).

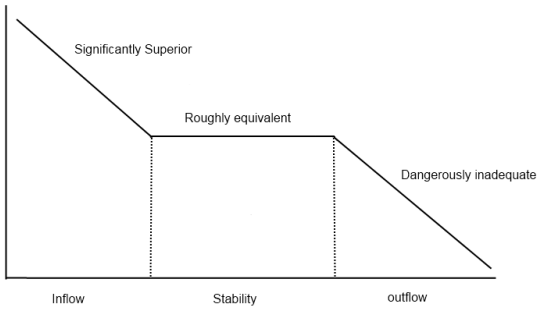


Figure 3.3.1

Our Approach

In this thesis we have made some adjustments to Slywotzkys Value Migration model in order to customize it to the Smartphone industry. Linux as a platform has been excluded from this analysis since it is an open source software/code which platform developers can build upon, and thus there are different platforms which build on Linux.

As the Smartphone industry as a whole is in a phase of global growth, partly because of the increasing amount of phone users around the world, and partly because of the fact that people are starting to buy Smartphones instead of feature phones, it becomes hard to draw conclusions from using the number of units sold. Irfan Khan express it in the following way: *"Overall we expect the Smartphone segment will grow in all our markets. This gives room for a number of vendors to get a slice of the cake."* (Irfan Khan2010-12-15)

The growing market has the effect of, in some sense, making all platforms look like they are growing in market share. However, when you compare them, it's often not the case. Even if a platform has substantial growth in units sold, its percentage market share could still be decreasing. That is why we have found it more useful to focus on the different platforms

market shares in percentage. This makes for a better comparison between different platforms, and to some extent eliminates the global market growth as a background noise in the analysis.

Since we are interested in analyzing how these market shares have changed over time it becomes important to try to capture these changes in the measure. Therefore, in the analysis we are going to look at the changes that have taken place during the first three quarters of 2010. There is one major reason for this. Changes in the platform landscape are happening faster now than ever before and some of the platforms that we see today are fairly young on the market. The five largest platforms three years ago are not the same as the five largest platforms today. Because we are analyzing the five largest platforms today, the changes of platforms over a longer time span would make this analysis immensely more complex. Hence, we have found it sufficient and necessary for this analysis to limit the amount of data to the three quarters of 2010 that are available today (dec 2010). This means that there are three measure points for each platform, first quarter 2010 (1Q10), second quarter 2010 (2Q10) and third quarter 2010 (3Q10). Consequently, there are two changes that can be calculated. To clear out some of the natural variation, we found it useful to make use of an average of these two changes. The result is a measure of average quarterly change of market share that a specific platform has sustained during the first three quarters of 2010. We think that this is a good indicator of how customers have voted on different platforms Value Propositions during first three quarters of 2010.

The next step is to define the boundaries for the different phases of value migration.

As mentioned before, Slywotzky uses companies market value divided with their revenues to measure companies' value migration status. In this analysis he assumes (following his empirical research) that companies with a value between one and two are in a status of stability. Values above indicate inflow and values below indicates outflow. However, as this thesis purpose is to understand how market shares are moving between platforms, we will use the change in market share as our measure. This raises the question, how should we define the mathematical boundaries between value inflow, stability and outflow? To this question, there is no answer in the literature. Thus, we had to make an assessment of what we should regard as a stable platform. How much average per quarter change in market share should we allow a stable platform to have? Intuitively, we estimated that an average market share change between plus one and minus one could be regarded as a stable development. Consequently, platforms above this barrier would be seen as in a value inflow phase and platforms below would be seen as in a value outflow phase. However, we also have to compare observations of

different platforms characteristics with the results of these calculations, in order to see if they match Slywotzkys description of the value migration phases.

Thus we have concluded that a stable platform should, in this thesis, be regarded as having a maximum change of plus-minus one percent in average market share.

3.3.2 Business Models and Value Propositions

Business Models

In order to understand value-migration, there is a need to discuss the concept of business models, or business designs as Slywotzky calls it. There is a vast amount of literature on this subject. However, there does not seem to be a general definition of what a business model is. Chesbrough & Rosenbloom 2002 defines it as *"the heuristic logic that connects technical potential with the realization of economic value"*; Amit & Zott 2001 as *"the content, structure and governance of transactions designed so as to create value through the exploitation of business opportunities"*

Christensen et al (2001) discusses new technological shifts which they refer to as disruptive technologies. They argue that present technologies often overshoot the customer needs and leave room for disruptive technology which is cheaper, simpler and more convenient and offers value that suites the general customer. Magretta (2002) says that the concept business model is unclear and is therefore confusing and difficult to use. She argues that it still has tremendous practical value for corporations such as Dell and Wal-Mart but a line has to be drawn somewhere to the meaning of the concept or else it will remain unclear. Eisenmann et al (2006) discusses business models from a platform perspective. They describe the dilemmas with pricing a platform due to its two sided customer approach. Continuingly, another dilemma that arises is if one should try to capture all the values themselves, thereby keeping the platform closed and risk defaulting; or if it should be shared with one's rivals, allowing them to capture parts of the value, but, at the same time, contribute to the platform by improving its usage. We have found the article "*Re-inventing your business model"* written by Johnson et al. to provide one of the best explanations of the core elements of a business model. Therefore, we will in this paper focus on their description of business models. Most people are familiar with the success of Apple's Ipod, but most people do not know that they were not the first to launch a digital music player. Diamond Multimedia and Best Data introduced their players in 1998 and 2000. Although they didn't succeed, Apple did. Why? One explanation is Apple's groundbreaking business model, not to just offer a product with a

snazzy design and good technology but to also offer easy and convenient downloading of digital music, both hardware, software and service was given to the consumer. (Johnson et al, 2008)

Most senior business managers are having trouble renewing their business model to create growth, like Apple (Johnson et al, 2008). Johnson et al (2008) states that there are two phenomena that are causing this problem. Firstly is a lack of definition, as there are not many studies made in this area which explains how a business model should be constructed. Secondly, most companies do not understand their current model, thereby having trouble analyzing it. The authors suggest a three-step-framework, a map, which companies can follow to tackle the problem. First, they should forget about business models and start by thinking about the idea of satisfying actual customers that call for a job to be done. Second, a blueprint should be constructed on how to make profit while fulfilling that customer need. In Johnson et al's 2008 model, this consists of four elements. In the final step, there has to be an evaluation of how much change is needed in the existing business model to seize the opportunity. By evaluating, a company can decide whether it can keep its present model and organization or if a new one has to be constructed. (Johnson et al, 2008)

Johnson et al (2008) define a business model by four interlocking elements that combined create and deliver value. The elements consist of customer value proposition, profit formula, key resources and key processes. The most important one is customer value proposition (CVP). The element states that a company can only be successful if it has found a way to create value for its customers, and thereby has found a way to get a specific job done for a customer.

The next element, profit formula, is about how to create value for yourself while performing a job, it consists of revenue model, cost structure, margin model and resource velocity. It suggests that a company should first figure out what the price should be for the CVP and work backwards to decide the price of the product. (Johnson et al, 2008)

Key resources are assets such as employees, materials, machines and products which are of major importance when delivering value. The focus is here on the main elements which create value for the company, the customer and how they interact with each other. (Johnson et al, 2008)

The final element is key processes, with emphasis on the importance of managerial and operational processes for a successful company. These should deliver value and should therefore be constructed in a way that they could be repeated and increased in scale. This might be tasks such as manufacturing, budgeting and sales. (Johnson et al, 2008)

These four elements are the foundation of any business. CVP and profit formula define the value created, while key resources and processes show how it will be delivered. A business should hold a stable system like this to be successful. (Johnson et al, 2008)

Value Proposition

In our analysis we will foremost focus on the CVP. The CVP is crucial for determining competitive advantages between different platforms and is therefore central when analyzing why value migrates between different platforms. Profit formula and key processes, we argue, are significant in terms of how companies should be able to create good financial performance and is therefore not crucial in this thesis, as we focus on what value different platforms offer customers. Hence, these two elements are closely connected to inter-organizational questions and do not directly involve value creation for the customers. Yet, to some extent, one can analyze certain key resources; this will be done in regards to different platforms integration to ecosystems. CVP focuses solely on how the product, in our case the platform, offers value for Smartphone buyers. As mentioned before, Slywotzky (1996) explains the driving force of Value Migration as the changing pattern of what customers need, want and are willing to pay for. We believe that, what customers need, want and are willing to pay for in many ways captures the essence of what you're trying to meet with the CVP. The company with the CVP that best captures what customers need, want and are willing to pay for will enjoy the most value inflow.

There is a great deal of literature covering CVP. Slater (1997) investigates how firms should position themselves in order to understand the true nature of customer value, how this might evolve and how a firm should develop and implement a customer value proposition delivery strategy. He further argues that customer value must be the purpose of a firm's existence and is critical for firm´s success. Anderson et al (2006) argue that managers in many cases add value to the customer value proposition without regard to what their competitors' offers or what the end consumer wants. The three important aspects they discuss are, a good value proposition should: offer benefits, be competitive toward rivals and offer a proposition that is easily understood but can at the same time grasp the critical issues of the customer. Collis &

Rugstad (2008) argues that if a company doesn't have a clear strategy, it is likely to fail when executing it. They have found three critical criteria's that need to be fulfilled to construct a good strategy; objective, scope and advantage; and furthermore argue that a firm whose strategy doesn't explain the customer value proposition advantage is doomed to fail. Futhermore, they advice managers to construct a value proposition map that compares different companies value propositions. However, this map requires extensive information on customers purchase criteria, information that we most likely won't be able to gather. Therefore we will need to use parts of this map combined with another value theory map, the Value curves in Strategy Canvas. The strategy canvas is a tool, with two purposes, constructing and executing a blue ocean strategy. It was first described by Chan and Mauborgne (2005) in their article "*Blue Ocean Strategy: From Theory to Practice"*. First, it captures the landscape of the industry, showing which factors competitor products are offering within the market space. By knowing the competitors focus and strategy, one can reorient its own strategy away from everyone else and find alternatives. Thereby, find new customers outside the industry and enjoy growth and profits. Second, the canvas presents the four action framework that can be used in order to come up with an alternative strategy. It advise that a company should ask itself four questions; which factors it can eliminate, reduce, raise and create within their value curve. These factors are interesting because they constitute a products customer value proposition.

In this thesis we will focus on using the diagnostic tool of value curves to compare different platforms value propositions. We will use a graphical depiction to illustrate the different platforms value propositions and thus be able to compare them to each other. A question that rises from this discussion is: *which factors are important for Smarphone buyers?* In the strategy canvas, they present a way in which one can plot value curves from principal industry factors. But they don't explain how to identify these principal factors. They seem to have discovered these principal factors by observing the industry. But how should we discover principal factors in the Smartphone industry*?* The solution to this problem is to try to gather information about which factors Smartphone customers evaluate when buying a Smartphone.

One problem in this analysis might be that some factors could be connected to the Smartphone manufacturer, thus making it difficult to separate manufacturer factors and platform factors from each other. This will be discussed later on.

Complementing Theories to Value Proposition

In this section we will briefly describe a couple of theoretical concepts which we believe could be of help when analyzing the different platforms Value Propositions.

Ecosystems

Ecosystems originally origins from natural science but has through the years been applied in economics. We believe that ecosystems could be a part in explaining different platform value propositions since ecosystems can create extra value for customers. Adner (2006) explains an ecosystem as a situation where a number of companies can create value that no single company could have possibly created on its own. . Fieda & Weiqou (2009) describe the Smartphone OS ecosystem as "food webs". They illustrate how different platforms feed from their ecosystem and states that only device makers and application developers are the ones that directly provide the platform owner with resources and argues that every platform has its unique support.

Network Externality Effects

Another part that could create value for customers are so called network externality effects. Zhang & Seidmann (2010) describe it in their article as from a software perspective as this: *"the value of using any particular software increases with the number of adopters"*. Schilling (1999) describes, among other things, network externality effects in her article *"winning the standards race"*. She argues that a user will gain value as the user base increases. Thus the value proposition of a certain product, in our case a platform, increases with the number of users. Schilling exemplifies this with the telephone; it is of no use when you only can call a limited number of people. She continues by saying that the effect also appears when complementary goods are important; this meaning that products are only desirable or functional when several complementary goods are obtainable for them. From a Smartphone perspective, complementary goods could be seen as applications.

3.4 Theoretical Framework

To illustrate the connection between the theories that constitutes our theoretical framework the following illustration has been constructed.

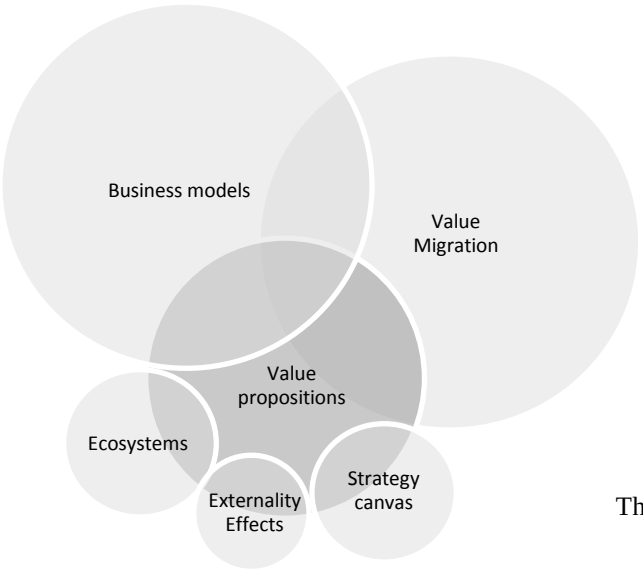


Figure 3.5

Value Migration, business models and value propositions form the center of our framework. However, the value propositions theory also connects the framework to externality effects, strategy canvas and Ecosystems. Taken as a whole, these theories constitute our theoretical framework. To finish, we are going to summarize how the different theories presented in this chapter will be practically applied in the analysis.

First, we will analyze different platforms value migration statuses with the help of Slywotzky's three phase framework. It will build on platforms average change in percentage market share during 2010.

Secondly, we will identify the principal factors in the industry and draw different value curves based on the strategy canvas. The principal factors will build on empirical observations but will also be strengthened by the value theoretical concepts.

Thirdly, the value curves will be analyzed with the help of previously discussed value theories. Platforms performance in these principal factors will constitute their Value Proposition.

4. The Smartphone Industry

4.1 Introduction

In this chapter we are going to give the reader a quick background on the evolution of the Smartphone industry. Subsequently, the current Smartphone landscape will be described and analyzed on a more general level.

4.2 Background

Before we start to discuss different aspects of the Smartphone industry's evolution, it is appropriate to describe the key actors. These players could be categorized into three different groups: platform developers, Smartphone manufacturers and operators. However, the operators' impact on the industry will only be discussed on a general level. Hence, there is no need to describe individual operators. In this subchapter we will discuss the different key operating systems as well as key manufacturers on the market.

4.2.1 Key Platform Developers

Microsoft - Windows Phone 7

Microsoft is the company behind Windows Phone 7 and mainly focuses on making operating systems for computers. In 1975, when barely any one knew what a personal computer (PC) was, Bill Gates and Paul Allen realized that it would one day be a useful tool for every desk and home. They founded Microsoft and launched their first computer OS, MS-DOS, which enabled the breakthrough for PC´s. By the end of 1980´s, there were more than 90 million PC´s worldwide. During the 90´s, they launched windows operating system 3.0, 95, 98 and 2000; the usage of internet and hand held computers began to increase extremely fast. (Microsoft History)

In 2000, Pocket PC 2000 was released. It operated and looked like Windows 98 but was made for being used as an OS in pocket PC´s and was not intended for mobile usage. (Notebooks.com)

Pocket PC 2002 came during 2001 and was compatible for Smartphone´s, thereby taking mobile computing to handheld devices for the first time with the same user interface as the PC

OS Windows XP. The following version, Windows Mobile 2003, had Windows Media player and Media center worked in, enabling the user to carry more extensive media libraries. Windows also offered a multi version choice by offering four different platforms, allowing Microsoft to take large shares of the market. Mobile 2003 was replaced by Mobile 5 in 2005. The new version offered a superior communication support for GPS and Bluetooth. Mobile 6 wasn't so different from version 5 but it did carry a large update in terms of integration with other services and made tasks easier to perform. Microsoft opened for the first time a marketplace for applications to challenge Android and Iphone with the new Mobile 6.5 (Brighthub.com Windows Mobile OS)

Windows Phone 7 is a completely new OS that has nothing to do with the Windows Mobile (Idg.se WP7). The work on WP7 began in 2007 and was back then called Photon. It was supposed to be launched in 2009 but was delayed. Instead, they upgraded Mobile 6 to 6.5 to buy some time. (Pocketnow.com)

Microsoft hasn't released WP7 primarily to make money out of it but as a strategic tool to protect its core business, Windows OS and Office products lines. The big advantage for users as well as for Microsoft is that the user experience is strongly incorporated with other services and products such as Windows Live, Bing Maps cloud services, Xbox Live, Office and Zune content platform.

Google - Android

Google is the controlling head of the Open Handset Alliance which develops the Android OS. Larry Page and Sergey Brin began collaborating with the search engine in 1996 which was later going to become Google. Google is of today a dominant player in the internet industry, offering services as their search engine, email accounts and maps among several things.

The story of Android began 5th of November 2007 with the underlying partnership organization Open Handset Alliance was presented. The Alliance is not only supported by Google, there are about 80 companies from different sectors represented such as large operators, chip manufacturers and OEM´s. (The story of Android, M3)

One year after the presentation, the first hardware product containing Android OS reached the market, HTC G1. After the second mobile was introduced, HTC Magic, the sales took off and Android started to gain market shares. Several Smartphones were launched during 2009 and in 2010 Google released its own phone, Nexus One. (The story of Android, M3)

Android is an open source coding system that is based on Linux, is constantly updated by different members of the Alliance. Google names every new version after a pastry or a dessert. The first version was 1.5 Cupcake and has since then had four large updates. Donut 1.6 made the system a lot faster and made many small updates. Éclair 2.0 and 2.1 made the UI look better and enabled multi touch. Froyo 2.2 made the handling of apps faster and enabled the usage of Flash. In the end of the year, Gingerbread will be released. The downside with the fast upgrade of the OS is that some of the apps only suite some models and there is quite a circus of which OS a new model will contain and if they are going to be updated to the latest version. (The story of Android, M3)

The application store is called Market place, and differs from the Iphone App Store by being completely open which allows applications to reach the market much faster. The down side of this is that apps aren't being verified, which enables virus and fake-apps. (The story of Android, M3)

Linux OS

Linux was being developed during 1992 by a finish student named Linus Torvalds. Linux is based on open encoding meaning that anyone can use it for free. The company is currently most well known when it comes to Smartphones, by the OS Android, which is based on Linux (Linux.org). However, Linux' own operating system for smart-phones is used by only 2% of the smart-phone market (Q3 Gartner.com)

4.2.2 Key Platform Developers and Manufacturers

Apple - Iphone iOS

In April 1976, Steve Jobs and Steve Wozniak founded Apple and released Apple I computer and Apple 2 in 1977. Both computers were very successful and Apple started to grow fast. (Markusehrenfried.de) Steve Jobs visited Xerox Corporation, a computer company in Paolo Alta, after buying stocks in the firm during the 1970s. He there saw the first computer ever with a graphical user interface (GUI) which would be the inspiration to Apples first computer with a GUI, Lisa. (inventors.about.com 1970) Lisa eventually failed because of its high but Steve Jobs realized that a computer has to be user-friendly and cheaper, this led to the creation of Macintosh (markusehrenfried.com). The computer was sold in 50,000 units the first months but was not a very strong number in sales. In 1985, the Macintosh got a sale boost but it was also the year that all the founders left the company. However, Jobs returned in 1996 and have been working for Apple since then. (inventors.about.com 1980)

Apple went through a tough financial period 1995-1997 (Apple history 96-97). Steve Jobs changed the corporate strategy by cutting prices on all products, releasing iDvd and iTunes and get into the "MP3-hype". It was believed that by making the Mac the best computer of the new digital lifestyle, sales would grow and Apples future would be secured. The first year, iTunes sold 70 million songs and the Ipod became a coveted product. (Apple history 2000) The success of the Ipod would later have great importance for the market adoption of the Iphone.

The iphone was revealed in January 2007 and released in June the same year. The phone was the first product to contain OS X. The special thing about it was that it had a touch based interface with only one physical button. Web browser Safari was integrated and could manage full browsing of any webpage. The interface was an updated version from the Ipod and had access to Google maps and Youtube. The Phone came with a set of standard phone applications although most applications were to be supplied by third party developers. (Apple history Iphone) The following version contained two large updates, 3G networking and built in GPS. The Iphone 3G was equipped with OS 2.0 which was fully integrated with iTunes (Apple history Iphone 3G). Iphone 4 is the latest release, which has been equipped with a better camera, display, battery time and thinner body. It also contains the latest OS, iOS 4 which is faster, is able to handle several programs at the same time and can manage video conference calls. (Apple history Iphone 4)

RIM - Blackberry OS

Research In Motion, is a Canadian company founded in 1984 by Mike Lazaridis along with Douglas Fergin. The first official Blackberry came in 1998 and was called RIM Inter@active pager 950 and it could send messages with guaranteed delivery. In 2003, there were 1 million Blackberry users (BBgeeks.com) and this number has exponentially increased to around 30 million 2009 (Q3 Gartner.com).

There has been a number of Blackberry OS released during the years. Blackberry OS 4.3 was one of the first OS´s. It contained quite basic features but had ability to record voice notes and send them which was quite revolutionizing at the time being. The following version 4.5 had more advanced e-mail support and media features in context of audio and video streaming. Version 4.7 was an improved OS in terms of usability; the logic of the UI was improved and was much faster than the preceding versions. The now existing version are 5.0 and 6.0 have both an overall upgrade in terms of e-mail, media functions and speed, version 6.0 probably

most important upgrade is the improvement of the touch screen usability. (Birghthub.com Blackberry OS)

Nokia - Symbian

Psion, was the company that was going to become the base for Symbian during the 1990´s. Psion was founded 1984 by David Potter they were at that time developing personal organizers. Psion became Symbian through a joint venture with phone manufactures Nokia, Ericsson and Motorola in 1998. The operating system, Symbian OS V6.0, was launched through Ericsson´s R380 in November 2000 and was followed by Nokia 9210 in June 2001(Symbian.org History). The phones were based on a developed version of what was earlier a Psion developed operating system. Since the joint venture, Symbian had until 2006 been used in over a hundred phone models and reached a cumulative sale of 100 million units (Morris, 2007) Nokia acquired Symbian in 2008 and formed the Symbian Foundation (Symbian.org History). Their Current OS is named N^¨3 where they have focused a lot on the user experience but are also on providing applications to the platform.

Nokia is currently developing Meego OS which is supposed to come during 2011. Meego is a new open source, Linux project, based on Nokia´s Maemo OS and Intel´s Mobilin OS. (Meego.com)

4.2.3 Key Manufacturers

Because of our main focus on platform´s in this thesis, we will only briefly discuss the largest manufacturers.

Sony Ericsson

Ericsson was founded in Sweden, 1876 (Ericsson.com) and Sony is a Japanese company founded in 1945 (Sony.net). Ericsson has been making phones since 1956 and Sony since the late 90´s. Ericsson had been very successful during the 90´s but was facing hard competition from Nokia. In the beginning of 2000, Ericsson made a loss of 2,4 billion Sek due to the fierce competition and problems with failing circuits among other things. This was one of the major reasons for why they merged with Sony in 2001. Sony was able to contribute with their skills in many areas such as games music and video and Ericsson with mobility. (Ericssonhistory.com) For long they have been relying on their own version of Symbian, called UIQ (thelink.co.uk) but are now using Android (Sonyericsson.com).

Motorola

Motorola was founded by the Galvin brothers 1928 in Chicago, Illinois. The company has throughout the years developed TV´s and radios but did also begin making communication devices during the World War II. (Timeline 1 Motorola.com)

Their step into the mobile market began in 1984 with the first handheld mobile phone. Thereafter, they grew in popularity and when they introduced the StarTac in 1996 (Timeline 2 Motorola.com). Motorola had big financial problems and had lost large market shares during the late 2000´s due to problems in their mobile division (Marketwatch.com). The problems kept on going and totally the mobile division lost $4, 3 billion between 2007 and 2009 (Wall Street Journal). Although they were able to turnaround, probably a lot because of their successful model Droid X during 2010 and sold around 8, 7 million phones the first quarter (GSMarena.com). They now seem to primarily focus on Smartphones with Android OS.

Dell

Dell was founded by Michael Dell 1984. Dell has mostly been known in the computer industry where they have mostly focused on selling custom built computers online. They sold computers for $50 million every day in the beginning of 2000 (History Dell.com) and is currently the 38 largest company in the US (Fortune 500 CNN.com) Their entry in the mobile industry has recently started in the US and are about to go worldwide (Richard Hægermark 2010-12-07)

Huawei

Ren Zhengfei founded Huawei in 1988 Shenzen, China (Time.com). Huawei´s business has been focusing providing telecom network infrastructure on a global reach (NZherald.co.nz) In 2010, they released their Android phone which was supposed to be the cheapest Smartphone on the market at that time (Huawei Engadget.com).

Samsung

Samsung is a Korean based company who mainly focuses on the home electronics industry, but they also makes phones. They introduced their first PDA-phone in year 2000 and are currently making Smartphones. (History Samsung.com) They have their own Bada OS but are also working with WP7 and Android (Peter Wissinger 2010-12-17).

LG

LG is a Korean based company, founded in 1958 and has been very active in developing home electronics. They began exporting handsets in 2001 and has sold millions since then and was in 2009 the third largest supplier of mobile handsets. (History LG.com)

ZTE

ZTE is a Chinese based corporation which began their operations 1985. They have been and are a telecom provider (History ZTE.com) but has also begun producing handsets (Products ZTE.com). For the most part they have been active on the Chinese market but are beginning to move their mobile operations to an international level (Peter Wissinger 2010-12-17).

HTC

HTC started their business in 1997 with building PDA´s and started making touchscreen phones in 1999 (History HTC.com). They used to make phones on contract for operators (Peter Wissinger 2010-12-17) but after 2006, they began making Smartphones under their own brand (History HTC.com).

4.2.4 The Evolution of the Competitive Landscape

About 18 years ago, in 1992, the first Smartphone was launched by IBM, called Simon (A short history, James P Martin, 2009). Of course, it looked like the phones did back then, like a brick, but it was much more advanced than it appeared at first glance. Simon contained features such as fax, email, calendar, world clock, calculator, address book and even had a touch screen (Mobile cell phones, Don Robers, 2009).

In the 1990´s, phone manufacturers sold millions of phones, although the technology wasn't that advanced yet. The Wireless Application Protocol (WAP) technology came in 1997 and enabled phones to access internet and send e-mail among other things. The WAP technology required more advanced software than was currently supplied to feature phones. This meant that phone manufacturers had to develop their current technology to meet the new standard. This was of course costly and might have been one large reason why the joint venture Symbian was created.

Operators have during the years tried to sell phones as well. One example is Vodafone, who has developed the concept Vodafone Live where they offer phones which through WAP can access news, games, movies etc (Vodafone.com) In Japan 2003, a Panasonic made phone with Vodafone Live installed was able to compete with Nokia´s and Sony Ericsson´s dominance

and reach number 4 in the top sales lists (cisionwire.com). But this concept doesn't seem to have had a global success.

Operators have throughout the years had a very strong influence on the market. The manufacturers have had to go through hard test to be allowed on the operators' network (Constantinou 2010-11-11; Cisco.com). Operators have also been able to support different actors in order to decrease others actors influence (Lead, innovate or assemble, Constantinou, 2010). The introduction of Apple´s Iphone has in a way damaged the operators influence and possibility to control the market; this is because operators are only allowed to sell Iphones' without any profit (Telekomidag.se; Peter Wissinger 2010-12-17; Constantinou 2010-11-11) and has to meet different demands from Apple (Peter Wissinger 2010-12-17; Constantinou 2010-11-11). Operators have therefore supported the Android operating system and helped it to reach a global spread (Constantinou 2010-11-11; Trustedreviews.com). The entry of Iphone also seems to have changed market because of Iphones platform structured OS. This has enabled new actors, application developers, to enter the market.

Smartphone´s haven't grown much until now. During 2004, the Smartphone's represented 4 % of the market (northstream.com) and had up until 2008 only 10 % of the market share (Gartner.com Worldwide smartphone sales).

Below (figure 4.2.4.1) one can see the different platforms market shares in percentage over time, figures are taken from gartner.com (see attachment 1).

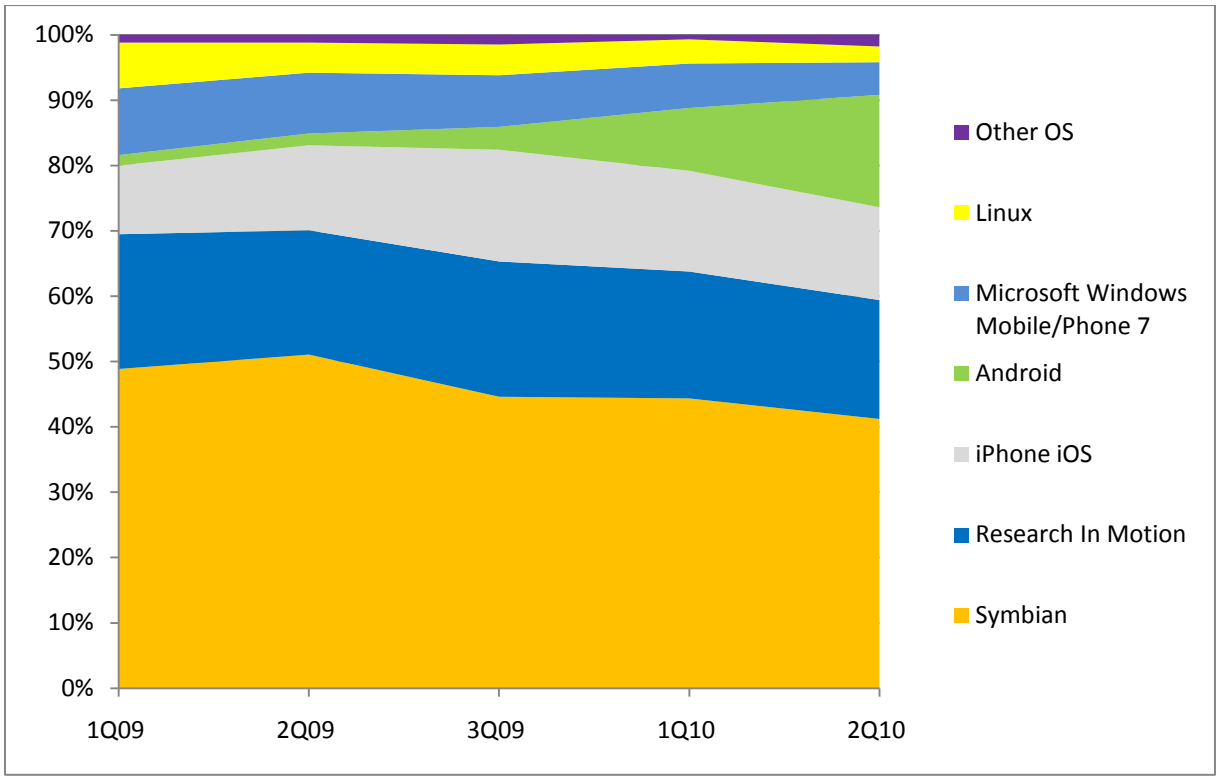


Figure 4.2.4.1

Symbian has, as mentioned before, had a strong hold of the market. It reached its peak during the 2Q 2009, around 50 %, but then began to slowly lose its powerful grip, as illustrated in figure 4.2.4.1 above. Apple had since the release of Iphone, until 2009, reached a steady hold and gradually kept on growing. RIM also had a stable grip in opposite to Microsoft who was struggling with their old Windows Mobile while developing Windows Phone 7. The most interesting actor in 2009 was the new OS Android with only 3 % of the market which drastically increased the first two quarters during 2010.

The figure bellow (4.2.4.2) is a illustration of the market ratio between Smartphones and feature phones over time, sales are in million units sold (X axel). The figures are taken from gartner.com.

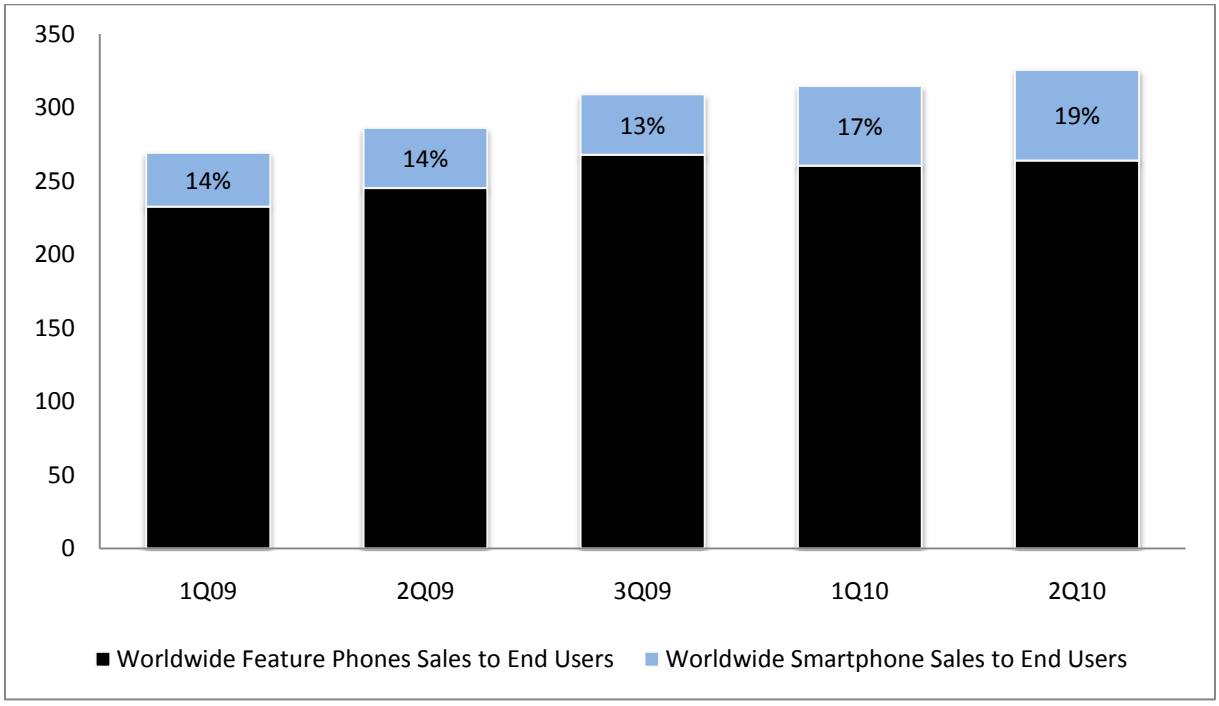


Figure 4.2.4.2

The entire phone market as a whole had since 1Q 2009 grown bit by bit and at the same time the Smartphone share has also increased with 5 % until 2Q 2010.

As have been discussed in this chapter, a lot has happened the last 10 years and still, nothing seems to have started too stabilized; rather the market seems to be growing and evolving at an ever increasing speed.

4.3 The Current Competitive Landscape

"The market is shifting very rapidly; big changes could now be seen in a quarter or half a year" – Peter Wissinger, Microsoft

The current market is very dynamic, competition is fierce and potential growth is very high. (Peter Wissinger 2010-12-17; Irfan Kahn 2010-12-15). The market is at the same time very wide, meaning that it contains a mix of smart- and feature phones (Richard Hægermark 2010-12-07). As can be seen in figure 4.3 below, the entire phone market has grown in the last

quarter and Smartphones has kept their share but increased in total numbers. Smartphones can today be seen as a large part of the mobile market.

Below (figure 4.3) is a comparison between second quarter 2010 and third quarter 2010. Sales are in million units sold and figures are taken from gartner.com.

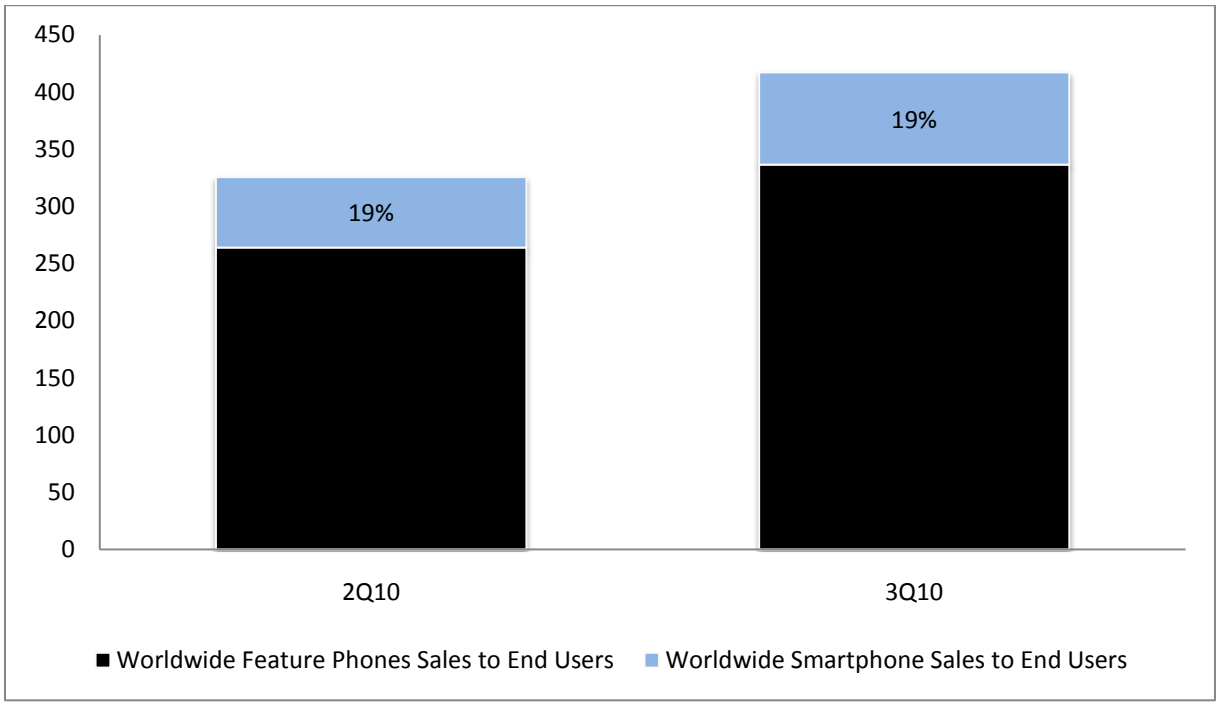


Figure 4.3

4.3.1 The Platform Competition

Today, when comparing figure 4.3.1.2 and figure 4.3.1.1 below, it appears like the OS market is reshaping. Symbian is quickly losing its leading position and seems to face competition from Android which is growing, fast. Blackberry has lost a small percentage and iOS is keeping its position where WP7 has had a slow start during the introduction. It appears to be very clear that Symbian is being challenged by all these new platforms.

The figures (figure 4.3.1.1 and 4.3.1.2) blow illustrates the market shares of different platforms; they illustrate the large changes that have taken place between the first quarter of 2009 and third quarter 2010.

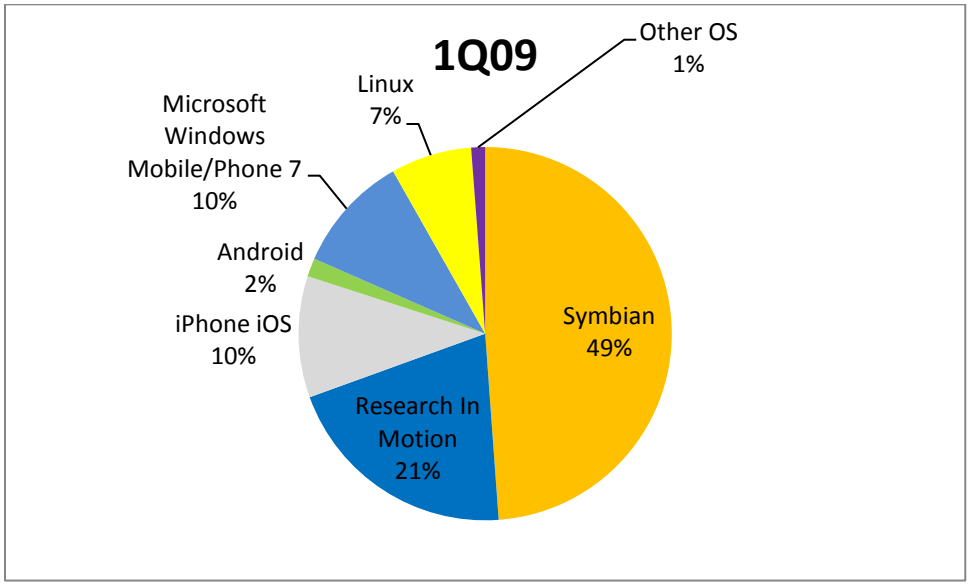


Figure 4.3.1.1

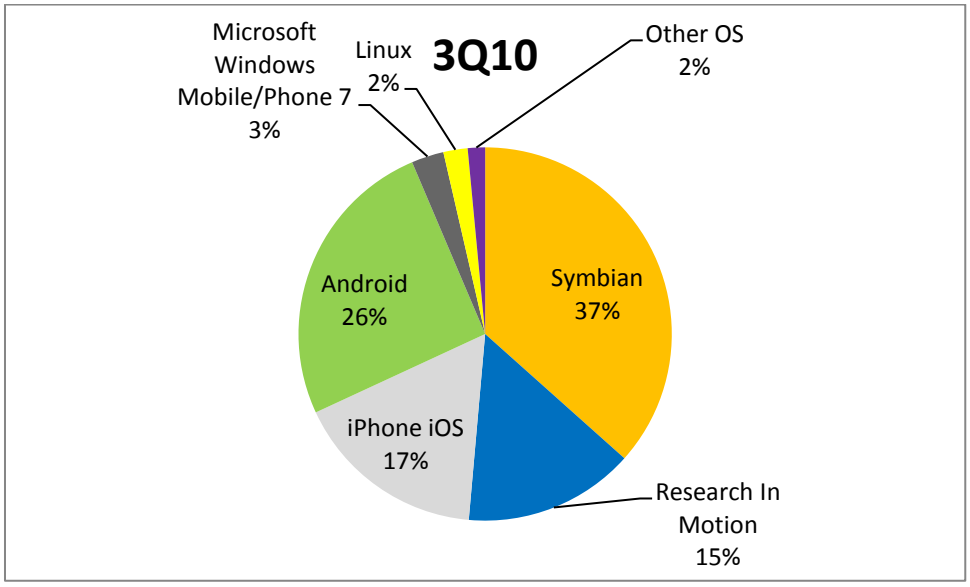


Figure 4.3.1.2

There seems to be a general perception among the interviewees that Apple is right now the most successful among the Platform actors.

Apple has at the time a strong foothold on the market and their brand is very strong. But what is more important is that their total user experience is clearly better than everyone else's and that they haven't been fundamentally threatened yet (Irfan Khan, 2010-12-15). Although, the

Iphone is more expensive than the rest in the industry (Constantinou 2010-11-11), it seems therefore that Apple is the best OS at the moment but the price might be a large factor why they haven't increased their market share the past year. Richard Hægermark points out, that at the same time Android and WP7 is growing (Richard Hægermark 2010-12-07).

Constantinou & Peter Wissinger seems to agree that Android´s and Apple´s OS are quite similar but that Android is a cheaper OS (Constantinou 2010-11-11; Peter Wissinger 2010-12-17). Irfan Khan states that Android has been able to advance because of its low price and the large selection of devices it can be offered in (Irfan Khan 2010-12-15). This seems to be good explanation to why Android have so suddenly taken a steady hold and become bigger than iOS. WP7 has as mentioned, a small position at the market for the moment. Peter Wissinger explains that WP7´s OS is different from Android and iOS and that they have created something new (Peter Wissinger 2010-12-17), therefore, it´s too early to say how WP7 will be accepted on the market.

Johan Larsson believes that Nokia and RIM will is the two most interesting players to follow because they both have big market shares but lag in their user experience (Johan Larsson 2010-12-13). As we can see in the two graphs above, RIM has dropped 6 % in market share the past year. Irfan Khan points out that RIM and Nokia still has strong foothold in some markets (Irfan Khan 2010-12-15). It might be possible that RIM, which seem to be mostly used in the US and UK will lack of presence in other countries, but remain in the same market share position there. RIM is according to us, a phone mostly used by business people, and that they have been alone in that segment. Richard Hægermark believes that Android is for the average consumer, Apple for the more high end customer and that WP7 focus more on business customers (Richard Hægermark, 2010-12-07). This implicates that RIM is currently being challenged, but it's too early speculate on how WP7 is actually challenging them. Symbian has a different situation from RIM due to their seemingly large global spread, and that they appear to reach out to the general customer; meaning that the threat from Android is more real to them than WP7´s to RIM.

4.3.2 Manufacturers

The big five manufacturers used to be Sony Ericsson, Nokia, Motorola, Samsung and LG; they seem to face a time of insecurity. Apple, among others, is threatening their position as a fully integrated actor, offering both platform and hardware, and has already put down Motorola from the throne (Lead innovate or assemble, Constantinou, 2010). Dell has recently entered the market and is now offering phones with both WP7 and Android (Richard Hægermark 2010-12-07), just as LG (LG.com). HTC has like Dell both OS´s but have been on the market a few years longer y**ea**rs now and has grown very fast. Sony Ericsson has been around for long now and has made the choice to only use Android, at least for the time being, probably because of their bad experience with the old Windows Mobile OS (Peter Wissinger 2010-12-17). Nokia is quite different from the above mentioned one´s and offers their own latest OS, Symbian^3 (Irfan Kahn 2010-12-15). Samsung has as Nokia their own OS, Bada, (Peter Wissinger 2010-12-17) but also WP7 and Android (Samsung.com). ZTE only has one OS, Android (ZTE.com) just like Huawei (Huawei.com) and both have begun to establish themselves in other markets besides China (Peter Wissinger 2010-12-17). RIM has their new OS Blackberry 6 (OS RIM.com) are currently losing ground in one of their main markets, the US (Irfan Kahn 2010-12-15) Motorola has made the decision to focus only on Android (Motorola.com)

In figure 4.3.2 below, are a compilation of different manufacturers and which platforms they use for their Smartphones. It is clear that Android has the most, 8 manufacturers, WP7 has 4. Red stands for platform and blue for Manufacturer.

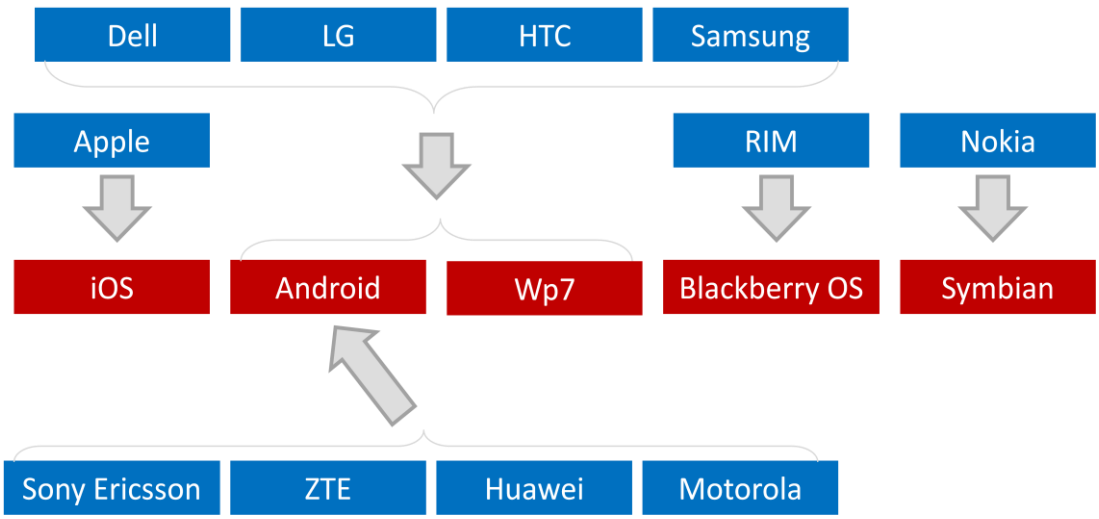


Figure 4.3.2

4.3.3 Operators uncertain situation

The recent years of entry by Smartphones and their open platforms has created ways for users to exploit third party services, in that way bypassing the operators billing and services. This has so far not had a noticeable impact yet but it is evolving. (Northstream.se)

Operators are at the time suffering from flat or declining revenues in both developed and emerging markets as customers expect lower network prices. Actors are introducing new services that are given away for free to ensure loyalty from customers, and those who try to charge for it, are having their customers taken by competitors who are bidding for them. (businessweek.com)

"Operators are still making a lot of money" Peter Wissinger, Microsof, 2010

It appears to be a general perception among the interviewees that operators are still very important actors and that they are still making huge sums of money. (Irfan Kahn 2010-12-15; Peter Wissinger 2010-12-17) Operators are currently joining forces trying to create WAC, Wholesale Application Store where they will offer their own applications in order to ease the impact third party applications developer (Constantinou 2010-11-11; Peter Wissinger 2010-12-17).

5. Platforms

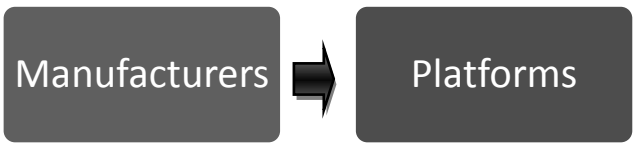
5.1 Introduction

In this chapter we are going to discuss the new focus on Smartphone platforms, how value seems to be migrating between different platforms and attempt to explain why value is migrating in these directions.

5.2 The New Focus on Platforms

Platforms have to a large extent changed the old rules of the game, opening up for new competition as well as for new innovation and growth. Generally, our findings point towards a new, strong focus on platforms among customers. There seems to be a consensus between our interviewees that customers today prioritize platforms as the most important factor when deciding which Smartphone to buy.
Peter Wissinger at Microsoft explains it in the following way:

Before you talked about buying a Nokia or a Sony Ericsson [phone], now you talk about buying an Android phone or an Iphone… There will be a shift away from phone manufacturers and towards platform developers…"
(Peter Wissinger, 2010-12-17)



Johan Larsson presents a somewhat similar view:

"It will be all about the platform during the next years. Those with the best platforms with good apps, payment solutions, good ways to measure user engagement and such will have the advantage." Johan Larsson, Mobile Business, 2010

We argue that, as a consequence of customers' new focus on platforms; naturally, we should focus on analyzing platforms.

5.3 Value Migration between Platforms

5.3.1 Introduction

In this part of the thesis we are going to analyze the current value migration status between different Smartphone platforms based on Slywotzkys "three phase framework".

5.3.2 Results

In order to confirm that these calculations were reasonably accurate, we had to compare different platform value migration characteristics to their value migration phase according our estimations. The result was a good correspondence between our calculations and the observations made in interviews and secondary data sources.

In the table below follows a summary of the calculations that have been made.

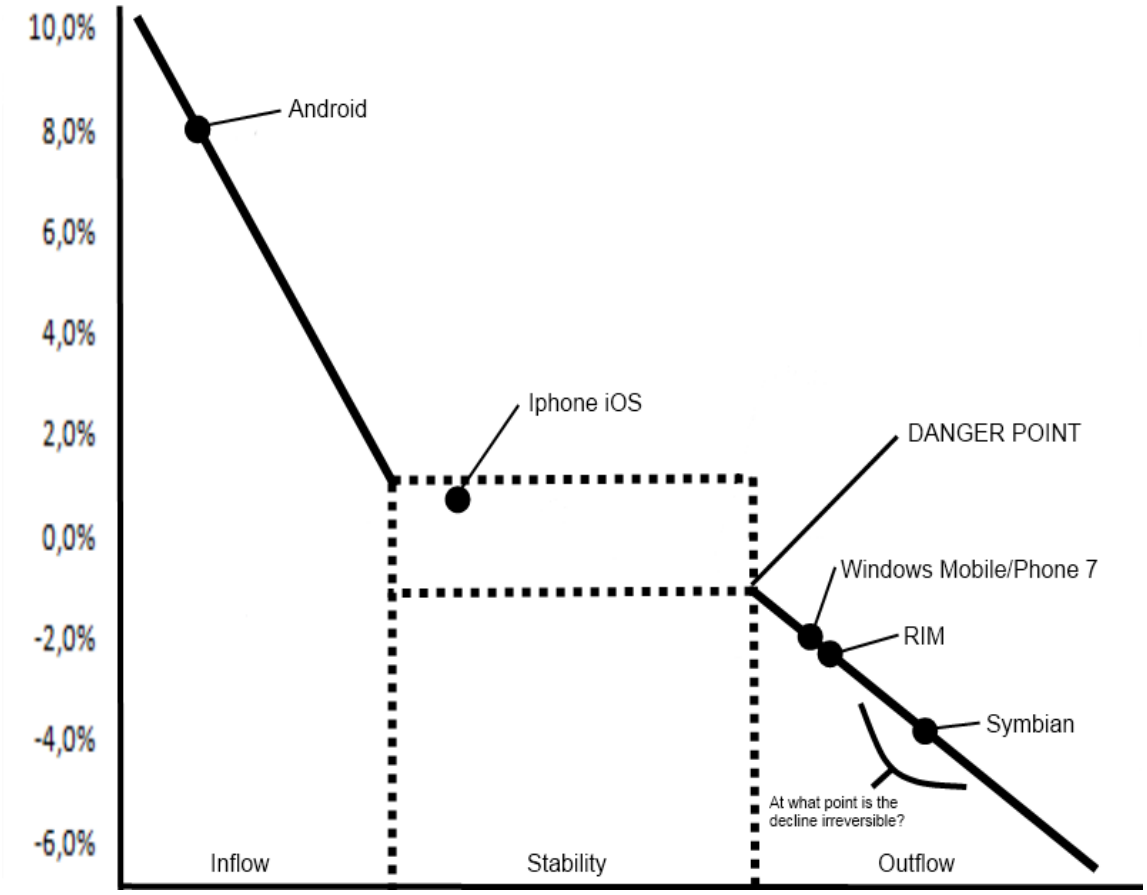
	Change	Change	Change Market share	
Platform	**1Q10-2Q10**	**2Q10-3Q10**	**Average, per quarter**	**Value Migration status**
Symbian	-3,1%	-4,6%	-3,9%	Outflow
Research In Motion	-1,2%	-3,4%	-2,3%	Outflow
iPhone iOS	-1,2%	2,5%	0,7%	Stability
Android	7,6%	8,3%	8,0%	Inflow
Microsoft Windows Mobile/Phone 7	-1,8%	-2,2%	-2,0%	Outflow

‹-1=Outflow
0+-1= Stability
›1=Inflow

5.3.3 Value Migration Analysis

Using the figures in the table above, the value migration process can then be illustrated in the following way. This illustration builds on Slywotzkys (1996) Value Migration Status figure. Lines illustrate the platforms current phase and how long it has processed in that phase. It

should not be taken as a mathematically correct graph; instead it should be viewed upon as an illustrative depiction of the three different phases.



In many ways this graph speaks for itself. Android clearly enjoyed enormous inflow of value during the first three quarters of 2010. Iphone iOS seems to be settling in the stability phase after previous year's large growth, even though it is still close to the value inflow phases threshold. Windows Mobile/Phone 7 is at – 2% a bit below the stability phase. A bit worse off are RIM which at -2,3 % is even further from stability. However, worst of are clearly Symbian, which is in a clear value outflow phase of - 3.9% average market share. One of the interesting questions that can be asked following analysis is, at what point in the outflow phase is the decline irreversible? Windows Phone 7 and RIM seems to be dangerously close, Symbian may already have passed that point, as we will discuss later.

In the next chapter we will further discuss the shift towards platform specific factors and how these, taken together, form the core of platforms value propositions.

5.4 The Classification of Principal Industry Factors

As previously explained, at the center of value migration lays the customer's priorities. In this section of the thesis we are going to explain how customers' priorities, according to our findings, have shifted during recent years. As we will see later, this shift is central to the understanding of why market shares have moved in the directions observed. Practically, there is one obvious benefit with discussing customers' priorities; if you are able to rank the different factors that come into play in customers' decision-making process, it can be used as a very good compass for customers' decision patterns. Consequently, it decides how your value proposition should be designed in order to create value for customers. Even so, one must keep in mind that there is always a certain amount of generalization in such rankings. In theory this sounds simple, and in some industries it is, but not in the Smartphone Industry. In this industry, customers' behavior is extremely complex and tends to shift very rapidly. Yet, we have, as discussed above, identified a general prioritization shift among customers towards platforms. The reason we call it general, is because we believe that there are many factors affecting customers' choice of Smartphone, some of these factors can be linked to the platform and others to the manufacturer. Because of this, we have divided factors which we think affects customers choice of Smartphone into two categories, platform- and manufacturer specific factors. Manufacturer specific factors are not new, they used to be the main factors that customers evaluated when buying a Smartphone. However, as platforms importance has grown, a variety of new factors has followed. The consequence is that customers today will first decide on which platform they would like, depending on how they prioritize individual functions of different platforms, and then secondly, will they decide on which manufacturer they would like to buy from. It should be noted that, in some cases, the manufacturer and the platform developer are one and the same, which makes this analysis even more complex. There might be other factors that can't be directly linked to neither of these groups, such factors will not be discussed in this thesis, but we welcome further research into the subject.

As discussed above, we believe factors linked to platforms are generally more dominant than factors linked to manufacturers. But, when cross comparing factors form both categories, there might as well be manufacturer specific factor with a higher prioritization than some platform specific platforms.

In this thesis we will not try to rank all different kinds of factors, or even claim that we have covered all possible factors for these categories, as we have not enough data to support such

claims. We are satisfied, for the time being, with the conclusion that customers generally seems to prioritize platform factors over manufacturer factors. Now we will briefly lift forward a couple of factors which we believe are important to customers' decision making process. We will elaborate on some of these later in the thesis.

We will try to illustrate these factors in the figure bellow (figure 5.4) by using a couple of questions that we think customers ask themselves when they are deciding which Smartphone to buy (the order of appearance does not imply any ranking).

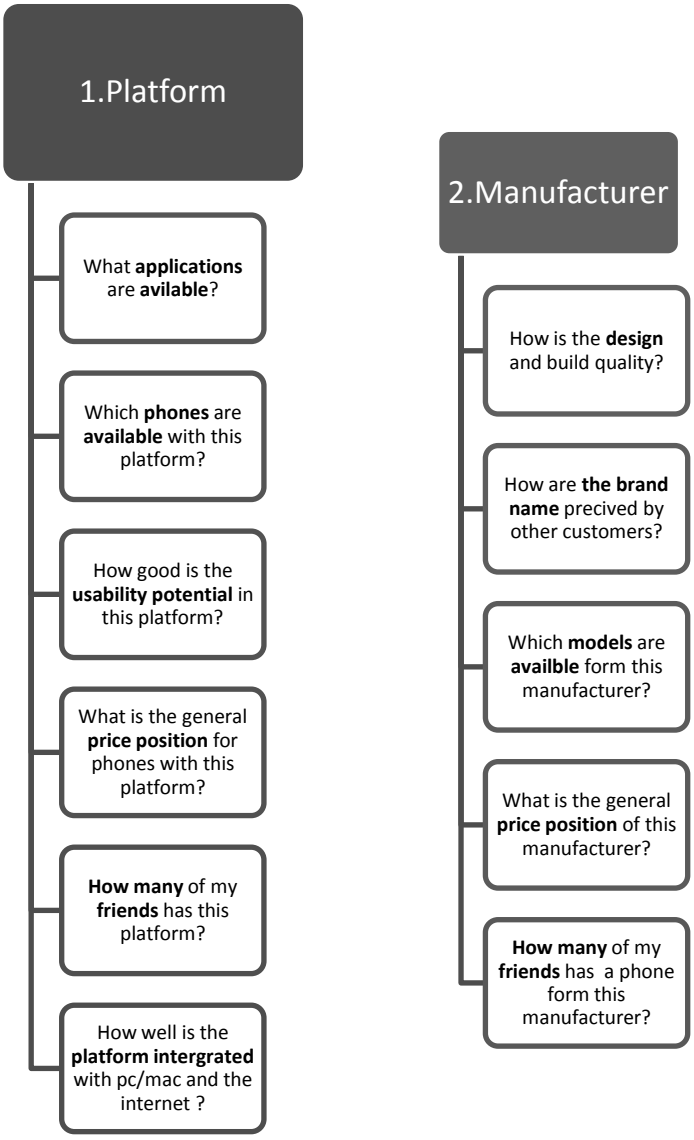


Figure 5.4

5.5 Different Platforms Value Propositions

5.5.1 Introduction

We will now try to explain the value migration between platforms, as a result of different value propositions. In this analysis we will use the six platform specific (principal) factors discussed above, which we believe constitute platforms core value propositions. We will rank these factors on a scale between 0 and 10.

5.5.2 Practical Approach

General Price Position

Price is, according to us, one of the most basic factors for a product and is a vital part in the value proposition. Irfan Kahn, Johan Larsson and Claes Eriksson also think that price is an important factor for customers today (Irfan Kahn 2010-12-15; Johan Larsson 2010-12-13; Claes Eriksson 2010-12-22). We therefore consider it as an important part of platforms value propositions.

When deciding a price factor, it would be difficult to take every device into consideration, therefore it will based on the average top three most popular Smartphones according to priceruner.com (containing a certain platform). Due to the variation of offered devices from country to country, and of the amount of data which would have to collected, we have chosen to investigate this from how it is reflected in Sweden's market. We believe that the Swedish market shows a good reflection of the global market and is at the forefront in offering devices to consumers. Average price and factor number for each platform is following:

Android is available at 2034 SEK (pricerunner.com). This is the lowest averaged priced platform and is therefore given factor number 1.

Blackberry/RIM costs on average 4133 SEK (pricerunner.com) and is priced in the middle of all OS, therefore given factor 5.

Windows Phone 7 priced at 5137 SEK (pricerunner.com) on average and is the second most expensive one, but is not much more expensive then Blackberry and has as a result of that factor 7

Iphone iOS, costs 6 812 SEK (pricerunner.com) and is the most expensive one and is consequently given the highest factor number, 10.

Symbian is priced at 2930 SEK (pricerunner.com) which is in the middle of Android and Blackberry for that reason given factor 3.

Variability of Smartphone Models

Irfan Kahn believes that a broad portfolio of devices can be a key to success (Irfan Kahn 2010-12-15).We also believe that the number of models a platform is available on is important. Customers might prefer different designs, have a certain preferences regarding the assembler brand or simply be price sensitive. Due to the variety of devices available in different countries, Sweden will be picked to symbolize the general global market. This choice is made due to the complexity to collect data and we argue that Sweden is in the forefront of mobility and should be seen as a good reflection of the global market. The source for the data will be pricerunner.com which is according to us a good source for Sweden´s Smartphone supply. Following available devices and factor number will be presented as follows:

Android has 39 available models (pricerunner.com) and is the highest, therefore given factor of 10.

Blackberry/RIM is available on 9 models (pricerunner.com). We believe that having around 9 models is a satisfying amount and is hence awarded factor 5.

Windows Phone 7 is for the moment available on 4 models (pricerunner.com), about half as many as Blackberry but still double then iOS, therefore given factor 3.

Iphone iOS is only on 2 devices available, which is the lowest and for that reason factor 1.

Symbian OS is available on 31 devices, almost as many as Android and is as a result, set to factor 9.

Usability potential

We believe that the usability potential is critical for customers. Johan Larsson, Irfan Kahn and Peter Wissinger also implicitly agree that it is important and can be what separates success from failure (Johan Larsson 2010-12-13; Irfan Kahn 2010-12-15; Peter Wissinger 2010-12-17). The usability potential is almost certainly the platform developer's most important strategic tool, if they can't deliver a usability potential, their business might be lost. The usability potential might also explain the pricing of the platform due to the resources spent on developing it.

Instead of doing the test ourselves, we have decided to use the Swedish magazine Mobil.se reviews which we consider to be a professional mobile phone critics with reliable tests. We are aware that in the case of Android, WP7, the phone manufacturers can add extra functionality to the end product, but in this case we will only consider the review done on the basic platform. Our factor number will be based on their rating number.

Android version 2.2 is given 9 of 10 in rating (mobil.se), factor 9

Blackberry/RIM OS version 5.0 is rated 8 of 10 (mobil.se), factor 8.

Windows Phone 7 got 7 of 10 in rating (mobil.se), factor 7

Iphone iOS got the best rating of them all, 10 of 10 (mobil.se), factor 10

Symbian was awarded 7 of 10 (mobil.se), factor 7

Number of Applications

The applications are in our view the user's possibility to customize the phone and enable the user to new ways to use it. It is argued by both Peter Wissinger and Irfan Kahn that the amount of applications isn't what is crucial, instead they argue that having the same applications as your friends is what matters; but Irfan Kahn continues by saying that having a large range solves this indirectly (Peter Wissinger 2010-12-17; Irfan Kahn 2010-12-15; Claes Eriksson 2010-12-22) We agree on Irfan Khans view, however we think that the more applications you have to choose from, the better and more specific applications you will find, hence we have chosen this as a factor. We also believe applications will be of great importance also in the future. This is confirmed by several of the interviewees. One example is Johan Larsson, he believes that applications will be one of the key factors in the future. He is convinced that the future trends will circulate around software. (Johan Larsson 2010-12-13) However, there seems to be some uncertainties around of how these applications will be distributed in the future. The open philosophy of Google has made it possible for other actors than themselves to sell Applications. Amazon.com has gone public with plans to have an Android application store in 2011. Peter Wissinger highlights the difficulty in making applications available for different platforms (Peter Wissinger 2010-12-17). These limit application developers from creating universal application. Consequently, platforms are dependent on an ecosystem of application developers. If application developers think that the installed base of a certain platform is to low in relation to the investments that has to be made,

they will probably not develop applications for such platform. This points towards the next important factor, the installed base.

Amount of applications and factor for the different OS´s are:

Android has 236 760 applications (androlib.com) which is the second highest amount, factor 9 of 10

Blackberry/RIM with its 10 000 applications (engadget.com) is the second lowest offering and is therefore given factor 2

Windows Phone 7 offers 4 000 applications (engadget.com) and is the lowest offer at the time, factor 1 of 10

Iphone iOS has 300 000 applications (articlebase.com) and is by far the largest OS supplier, factor 10 of 10

Symbian offers 13 000 applications in their OVI-store (best-choice-tech.com) which is almost the same as Blackberry, therefore given factor 2 of 10

Installed Base

The installed base, meaning how many devices with a certain OS are currently used by end consumers, is considered by us to be a significant factor because this results in externality effects; a product creates more value for customers when there are more people using it. When selecting a platform, it might often be the case that the choice is depending on which OS the people in your surrounding are using. By having the same OS will in many cases enable an extended usage of a certain OS, for example one needs a Blackberry to receive and send messages with their unique messages service from and to another Blackberry, an iPhone user can only play games with another iPhone user etc. Customers tend to want the same applications as their friends, and as it is now, platforms have their own applications stores; meaning that you will in some cases need the same OS to access to the applications as your friends.

Due to the short lifetime of electronics, especially mobile phones, the installed base will only cover OS´s sold from quarter 1, 2009 until quarter 3, 2010. Numbers and factor:

Android has been sold in approximately 45 million devices (Gartner.com). It has a lot smaller installed base than Symbian, although it is still very large in numbers, relatively speaking, especially compared to WP7, therefore it is given factor number 5.

Blackberry/RIM has an installed base of around 70 million OS (Gartner.com). By having sold 25 million more than Android and 85 million less than Symbian, we have awarded Blackberry with factor 6. (Gartner.com)

Microsoft hasn't given out any clear figures for **WP7** other than that they have delivered 1,5 million OS devices to carriers (Engadget.com), thereby leaving figures for end users out. Although this is however a very small amount compared to the other OS developers, which end up with having the least installed base and awarded factor 1.

Iphone iOS has been put into roughly 50 million sold Iphones (Gartner.com). Being only slightly more sold than Android, it will also be given the same factor, 5.

Symbian has the most OS´s with just about 155 million sold (Gartner.com), therefore given factor 10.

Strength from the PC and Internet Industry (ecosystem)

Peter Wissinger argues that the platforms with connections in the PC and internet industry have a unique position in the market which is extremely difficult to replicate (Peter Wissinger 2010-12-17). We agree with Peter Wissinger´s view and argue that WP7, iOS and Android has certain strengths which Blackberry and Symbian lack. When selecting a Smartphone platform, you might chose it for several of reasons. One thing that we believe can have a large impact on that decision is if you have a PC with Windows OS, a MacBook with iOS or that you use frequently Google's internet services. We believe that these types of ecosystems will have a large impact on customers' choice of platform in the future. Today it seems like platform developers are scrambling to make use of their ecosystems. Such as releasing tablet PC's, which both Apple and Android have done. RIM and Windows Phone 7 are following their example and will also release tablet PC's in the near future. Analyst Vincent Chang is convinced that integrating your phone with other devices such as tablet PCs, within the same ecosystem, will be of great importance in the future as it is this type of 'cross experience' that high end Smartphone users will be looking for (cellular-news.com). We believe this to be true.

Android core strengths is probably Google´s email service Gmail, map services Google Maps, search engine, web browser Chrome and media provider Youtube along with several of other services (Google.com). What Google don't have is an OS for ordinary PC´s yet, although the Android OS is available on Tablet PC´s (Android-tablet.org). Google´s internet services are widely recognized and used globally, this creates a big advantage for their Android OS system, but on the other hand, they still lack an ordinary PC OS. This is why we decided to give them factor 6 of 10.

Blackberry/RIM has for the moment not any position in the PC or internet industry (Rim.com). Because of Blackberry's lack of presence, they get factor 0 of 10

Note. As mentioned before, in the near future RIM will release a tablet PC. However, this should not be taken into account in the analysis of their current situation.

Microsoft´s Windows is their PC OS which has probably been installed on hundred millions if not billions of computers and is also available on tablet PC´s (Microsoft.com). Programs such as internet explorer, office and media player are offered to their and other OS´s. They also provide internet services through Windows Live such as email service Hotmail, search engine Bing, and chat service MSN etc (Live.com). We argue that with Microsoft´s widely spread PC OS, programs and base of internet services is of major importance, therefore their factor is set to 10 of 10.

Iphone iOS has support from a lot of different Apple programs, for instance, the music player iTunes and internet browser Safari. But, also from their own computers, notebooks and tablets containing similar OS. Their internet services consist mainly from their iTunes Store where consumer can access movies music etc, but also the social network Ping. (Apple.com) Apple we think is as Microsoft, widely spread in the PC industry and they also have a strong internet service. However, their lack of other internet services puts them just behind Microsoft with factor 9 of 10.

Symbian might to some extent have support from their OVI store. The OVI store offers music, maps, games etc by downloading the OVI program or by logging in with your Symbian phone (Ovi.com). Although, OVI doesn't seem to be widely spread, not anywhere near to Google´s, Apple´s or Microsoft´s services; they don't have a PC OS either, why we have decided to set the factor to 1 of 10.

5.5.3 Analysis of Different Business Models

Below is an illustration (figure 5.5.3.1) of the different platforms value curves.

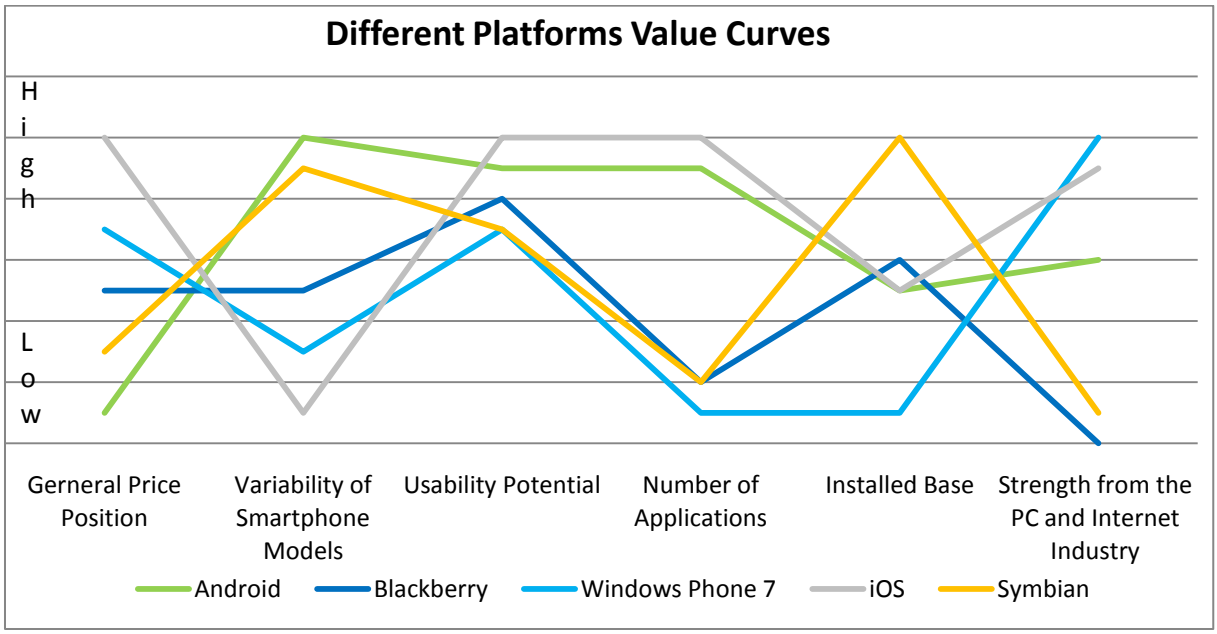


Figure 5.5.3.1

There seems to be a good spread between different platforms **price positions**. Expectedly iOS captures the top position, followed by Windows Phone 7, Blackberry and Symbian. Least expensive are Android, and at the same time, Android has the best **variability of Smartphone models**. High variability seems to have a negative correlation with general price in this graph. Economically speaking, this is rather logical. Generally Smartphone manufacturers with the same platform compete with each other, which create a price pressure on Smartphones with that platform. iOS are on the opposite side of this, there are currently only two models available, which are both manufactured by Apple. Hence, the price is a lot higher. There are of course other factors which might partly explain this relationship between model variability and price position. The next factor are **usability potential**, all platforms seems to have a rather high usability potential. However, iOS has the highest, closely followed by Android, Windows Phone 7, Blackberry and Symbian. When it comes to the number of applications, it becomes rather obvious that iOS and Android are playing in their own league. The other platforms have long way to go if they want to come up in the same level of applications. Windows Phone 7 has a good excuse, since it is a new platform and thus hasn't had the time to build up a large number of available applications yet. However, Blackberry and Symbian has been around in their current form for a while, thus it could be

argued that they have failed to understand the future importance of Smartphone Applications and thus lagged behind in this development. Since, Symbian has the largest market share, it comes as no surprise that they also have the highest **installed base** factor. The other platforms are clustered in the middle with similar installed bases, Except Windows Phone 7 (and before that Windows Mobile). We doubt that this factor will help Symbian much, since it lag behind in overall user experience and are continually loosing make share. Also, it is doubtful that this installed base will be of any significant strategic advantage for Symbian in the future, since it now only manufacturer, Nokia, is going to focus on their new Smartphone platform MeeGo. What's more, in the case of Windows Phone 7, we believe that the small installed base could prove to be a hard obstacle to overcome. It is important for Smartphone users that, at least some of their friends or colleges that have the same platform, otherwise there are no network effects available for customers who buys a Smartphone with that platform. Hence, a critical mass of users has to be attained. Platforms **strengths from the PC and internet industry** we believe will prove to be very important in the future. This is where it becomes very interesting; this is namely Windows Phone 7's strongest factor. Obviously, Windows phone 7 and iOS takes a high position here as a consequence of their developing companies' strong presence in the PC and Internet Industry. Android are closely following as a result of Google's dominance in the Internet industry. This puts these platforms in a good position for the future. However, Blackberry and Symbians outlook for the future are not as bright. Both have a very low factor, which could put them in a difficult position in the future. They have to rely on creating partnerships with different actors in order to form some sort of ecosystem around their platforms.

In this next graph (figure 5.5.3.2) we have modified the value curves colors to represent the platforms value migration status according to our previous value migration analysis (see 5.3). Red indicates value outflow, Green indicates value inflow (only Android) and black indicates stability (only iOS).

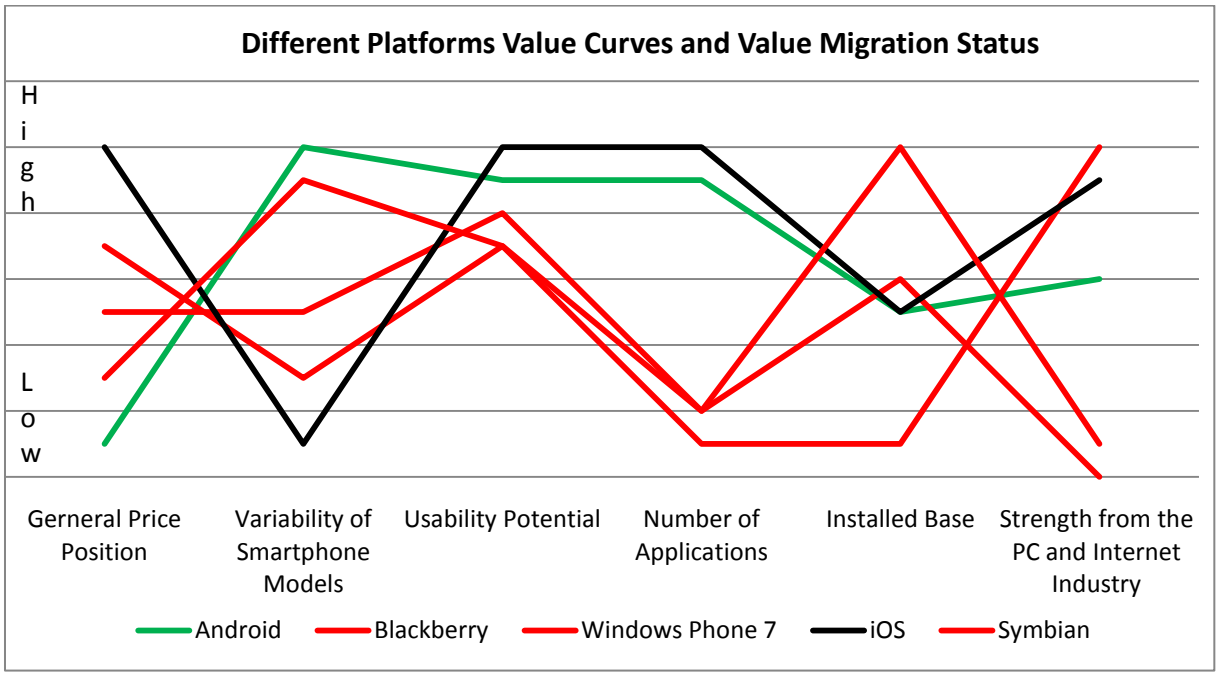


Figure 5.5.3.2

Interestingly enough, we can here se that the three platforms which are in value outflow phases are clustered around a medium **price position**. The big winner in terms of value migration, Android, has the lowest general price position. This could be interpreted as follows: the low general price position of Android Smartphones have contributed to its large value inflow. But at the same time, the second best performing platform, in terms of value inflow, iOS, has the highest price position. At first glance this could seem like contradicting. However, one possible explanation is that Smartphone customers generally could be divided into two different groups: one that is willing to pay a lot extra to buy the "best possible phone" on the market (Because of Apple brand and design, usability potential and number of applications etc.), regardless of price, and one that consists of customers that wants the best Smartphone they can buy for a reasonable price. The second group is probably considerably larger than the first, which would explain Androids large inflow phase and iOS Stability phase. Android has the best price and still seems to outperform other platforms in terms of usability potential and numbers of applications which are important factors for customers, except iOS . This has put other platforms in value outflow; they seem to offer less for more. This appears not to apply to iOS, again, different types of customers could be the explanation.

When it comes to **Variability of Smartphone models**, we can clearly see in this graph that platforms in value outflow phases have, again, medium factor values. The conclusion could be that it is either better, as in Apples case, to focus on one or two very good models or, as androids case, try to have as many different models as possible available to customers. All platforms in value outflow phases have lower **usability factors** than Apple and Android, even though the difference is not that great, it is most likely a factor that is contributing to their value outflow status. The difference becomes even more significant when comparing **number of applications**. All platforms with value outflow migration have a very low number of applications in this graph. As with installed base, we believe that there is a critical mass of applications needed for a platform. This means that there has to be enough applications so that people feel like most applications they want are actually available. Thus, the low number of application available to these platforms is probably a contributing factor to their outflow of value. It is harder to draw any conclusions from the **installed base** factor in regards to value migration status. except what has already been discussed in the previous graph. The installed base does not appear to be as clearly decisive as other factors mentioned. We believe Symbian could have used it to their advantage but it seems like that has not been the case. In the final factor, there is especially one interesting aspect to point out. It is the fact that of the three value outflow platforms, there is one that has a great deal of **strength from the PC and internet industry**, Windows Phone 7. The others have almost none. We believe that this could be an important factor that could, in the future, stop or even reverse the value outflow from Windows phone 7. The outlook for Blackberry and Symbian are however more gloomy, especially if this strength turns out to be vital in the future, as we believe is likely.

6. Conclusions

6.1 Introduction

In this final chapter we will present the most important results discovered in this thesis. Hopefully, these results will shed some light on the current competition situation between different platforms in the Smartphone industry.

6.2 The Smartphone Industry

The Smartphone industry is a fast growing, immensely complex and rapidly evolving industry. The industry's competitive landscape consists of various types of actors, all exercising different influence on the industry's development. We have generally categorized these actors into: manufacturers, platform developers and operators. However, some manufacturers are also developing their own platforms, which further complicate matters.

The industry is currently going through a phase of transition. The new focus on platforms, from customers as well as producers, has changed the competitive Smartphone landscape.

With this change, new platform specific factors have arisen (e.g. applications, platforms ecosystem and installed base) that we argue, are generally more prioritized among customers than manufacturer specific factors (e.g. design). In practice this would imply that customers first evaluate which platform they want, based on its composition of different platform factors, referred to as value propositions. Subsequently, they will choose which manufacturer they want to buy their Smartphone from, based on manufacturer specific factors. Hence, the second choice is thus limited by which platform/s manufacturers are using for their Smartphones.

Furthermore, we have found operators to exercise a form of disruptive force on the natural evaluation process by which customers choose their Smartphone. By this we mean that operators influence customers' choice of Smartphone, thus making it harder to analyze what value proposition composition customers really prioritize.

6.3 Platforms Value Migration Statuses and Value Propositions

We have analyzed the five largest platforms currently on the market. First, we have performed a Value Migration analysis of different platforms value migration status as of 2010, based on their change in average market share and Value Migration characteristics. This analysis involves using the Value Migration framework for categorizing platforms value propositions into three different phases: value inflow, stability and value outflow. Secondly, we have analyzed different platforms value propositions based on important platform specific factors. The platform specific factors that we have found to be important for customers, and when combined should represent different platforms value propositions are the following:

- General Price Position
- Variability of Smartphone Models
- Usability Potential
- Number of Applications
- Installed Base
- Strengths from the PC and Internet Industry

In this analysis we have used a graphic depiction of platforms value curves, a strategy canvas, to compare their value propositions. Finally, we have integrated two theories into a graphic depiction which illustrates both different platforms value propositions and Value Migration statuses.

Our findings can be summarized as follows:

- **Android** is currently enjoying very a large market share growth. It is clearly in a phase of **value inflow**. In terms of value proposition, android seems to offer a "more for less" scenario for customers. Smartphones with Android appears to have the lowest average price, and at the same time, offer better usability potential and availability of applications. Also, Android offers the largest variability of Smartphone models which we believe is definably a benefit if you want to sell large volumes. We believe these factors largely contribute to Androids growth in market share. Android also has strengths from the Internet industry which we believe will be of great significance in the future.
- **Iphone iOS** growth speed, in terms of market share, has started to decrease. It is now just below what we define as value inflow. Consequently it seems like Iphone iOS has

gone into a phase of **value stability**. It has the highest price position but also the best usability potential and availability of applications. Iphone seems to have, to some extent, its own market, consisting of loyal followers and high end demanding customers that are willing to pay a lot extra for the best user and design experience available. This has created enormous profit potentials for Apple which has been able to sell Smartphones with very good margins. Furthermore, since this market could be seen as a form of niche within the Smartphone market, we believe this could put a limit on Iphone iOS's achievable market share. Hence, it could be a contributing factor to Iphone iOS's slowdown in value inflow during 2010. Apple is the only manufacturer of Smartphones with this platform and there is a very limited number of models available (currently two). The benefits and weaknesses of this strategy could be discussed. The outcome of such discussion would however depend on the strategy's ultimate goal, growth in terms of volumes or growth in terms of revenues. In Apple's case we believe it's the latter.

- **Windows Phone 7/Windows Mobile** is in a phase of **value outflow**. However, it is the platform closest to stability of those in the value outflow phase. Because it's so new, it's hard to draw conclusions from its value migrations status. However, some conclusions about its value proposition can be made. It seems to have fairly good usability potential but lack the large user and applications base that we believe are important today, and will become even more important in the future. The most advantageous factor for Windows Phone 7 seems to be its strengths from the PC and internet industry, trough Microsoft's ecosystem. This will probably grant Windows Phone 7 a strategic advantage in the future; compared to Blackberry OS and Symbian.
- **Blackberry OS** has the second largest fall in market share, thus also in a phase of **value outflow**. It Seems like Blackberry OS has had a hard time adapting to the current platform driven Smartphone landscape. The platform appears to have a bit better usability potential than Windows Phone 7 and Symbian. However, like these platforms, it also lacks a critical number of applications. Furthermore, Blackberry OS has no strength from the PC and internet Industry.
- **Symbian** are in a phase of **value outflow** and seems to have been for a while. It is undoubtedly the platform worst off in terms of value migration. Symbian has been losing market share for a while now, quite possibly it will continue to lose even more. It has the same usability potential as Windows phone 7 and a similar number of applications as Symbian. As a consequence of its historical and still high market share,

its aggregated Smartphone sales have become a large installed base. However, we believe that they have failed to mount some kind of advantage from this installed base in the past. Also, we are doubt that it will be of any significant strategic advantage in the future, since Symbian's now only manufacturer, Nokia, is going to focus on their new Smartphone platform MeeGo. Finally, Symbian, as blackberry, has almost no strengths from the PC and internet industry. We believe this well show to be a great weakness for both Symbian and MeeGo in the future.

Generally, we can conclude that all platforms currently in value outflow seem to have at least one mutual problem, the lack of applications. Since applications has become an important factor that customers' seem to value rather high, the absence of applications can very well cause some customers to choose another platform.

It is hard to specify between which platforms market shares are moving. However, we believe that Android is enjoying value inflow from all platforms on the market. Although, probably not as much from Iphone iOS as from the platforms in value outflow phases.

6.4 Reflections over Future Studies

This thesis has been investigating how and why market shares are moving between different platforms in the competitive Smartphone landscape. This research could be done again in a couple of years as new actors might have entered the market and as these value propositions might have changed. During our studies, we have found the operator's current situation to be interesting as their revenues and influence in the market decreases. It would therefore be an idea to make out how this is evolving and what trends are driving these changes. The manufacturer's importance is at the time being shadowed by the platforms. One might investigate what can be done to prevent this from happening and how the future might turn out for them. Smartphone OS has enabled other companies to create applications; one might investigate how companies can use applications strategically to increase customer value.

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8. Attachment 1

Interview Guide:

1. What is your view on the current market competition in the Smartphone Industry?

2. In what way do you think the Smartphone landscape will change over the next 3 years?

3. New platforms such as Android and Windows Phone 7 seem to be changing the current Smartphone landscape; how significant will these platforms be for the future development of the industry?

4. What general trends do you see in the Smartphone industry today?

5. Which Smartphone attributes do you think customers prioritize when they are thinking about buying a Smartphone? (e.g. price, number of apps, customization etc.)

6. What impact do you think that applications (apps) will have on the future Smartphone landscape?

7. Do you see any tendencies towards shifts in the current value chain of the industry (value migration)? (e.g. value might be moving from manufacturers to platform developers)

8. Which parts of the value chain has the most profit today and which parts do you think will have the most profit in 3 years? How should companies in your business sector act in order to secure profitable parts of this future value chain?

9. How do you think that the mobile operators position will change during the next 3 years, will their influence increase or decrease?

10. Do you think that there will be a commoditization of Smartphones in the future, much like in the PC industry during the 90s? Where customers are mainly interested in the operating system and not the hardware, where the only way to differentiate your product will be trough low price?

11. The "overall landscape question"

Some people argue that one can divide the Smartphone industry into three subcategories: leaders, innovators and assemblers.

↓ Leaders (New product experiences)-Apple, RIM

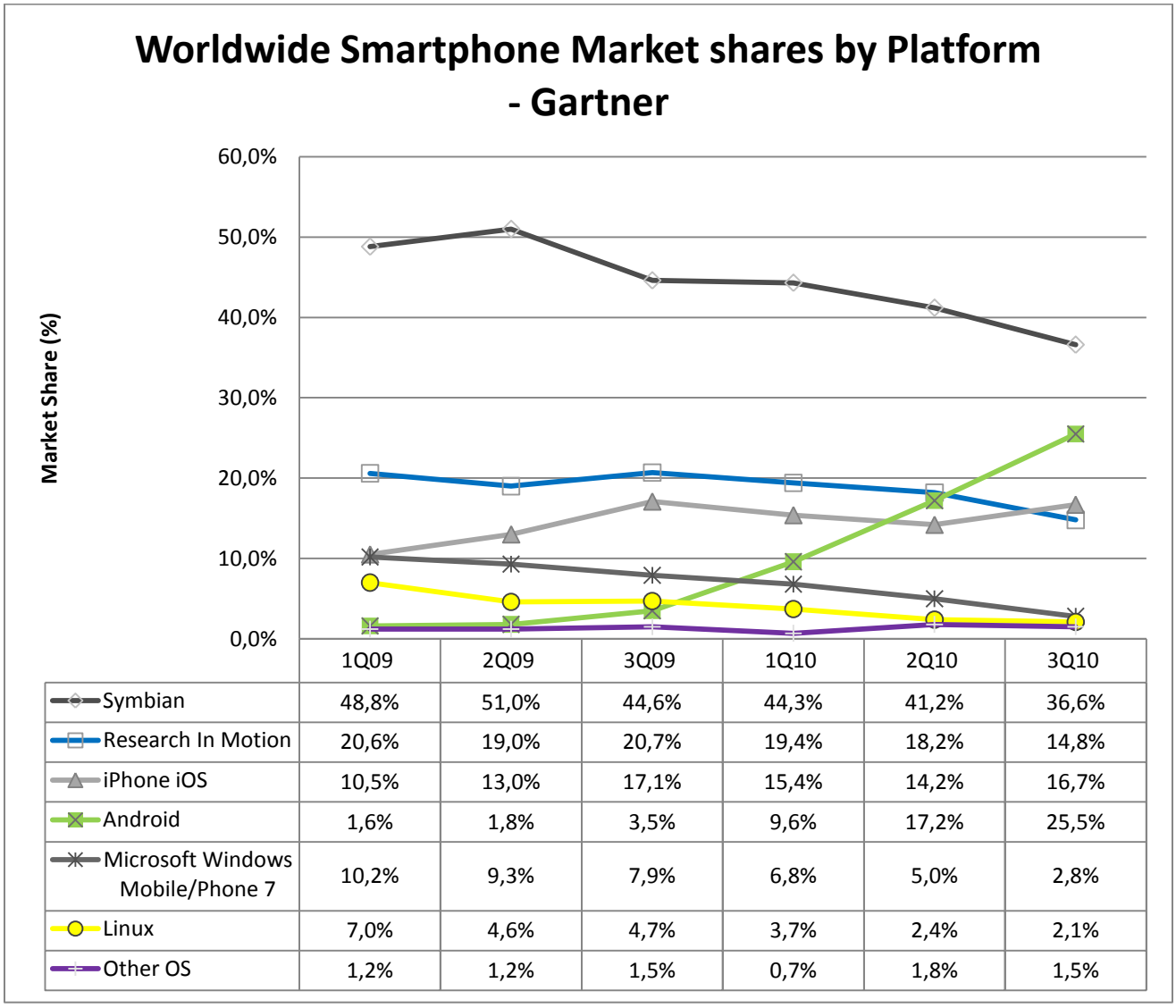
Innovators-HTC, SonyEricsson, Nokia, Samsung, LG, Motorola

↑ Assemblers (Price competition)-Dell, Acer, ZTE, Huawei

Furthermore, in this context it is often said that the performance pressure from the leaders and the price pressure from the assemblers are squeezing the innovators in between, which creates an untenable situation for the innovators.

Do you agree with this view? What thoughts do you have on this matter?

9. Attachment 2



	1Q09	2Q09	3Q09	1Q10	2Q10	3Q10
Symbian	48,8%	51,0%	44,6%	44,3%	41,2%	36,6%
Research In Motion	20,6%	19,0%	20,7%	19,4%	18,2%	14,8%
iPhone iOS	10,5%	13,0%	17,1%	15,4%	14,2%	16,7%
Android	1,6%	1,8%	3,5%	9,6%	17,2%	25,5%
Microsoft Windows Mobile/Phone 7	10,2%	9,3%	7,9%	6,8%	5,0%	2,8%
Linux	7,0%	4,6%	4,7%	3,7%	2,4%	2,1%
Other OS	1,2%	1,2%	1,5%	0,7%	1,8%	1,5%

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http://www.gartner.com/it/section.jsp?type=press_releases&format=archive&year=2010&show_archived=true