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ABSTRACT

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Abstract

This thesis examines the product launch of Windows Vista, which occurred in 2007. The aim of this study is to understand the failure of Windows Vista and why it did not meet the high expectations that Microsoft, public and media had towards the operating system. The research question is: "How Windows Vista product launch can be explained with help of critical factors in product launching?"

This study provides academic insight what can happen when critical factors are not paid enough attention to in product development phase and in launch planning. Carefully executed new product development is important for companies that look forward to launch competitive products that will have success on global markets. After a product has been developed, the launch needs to be planned and executed well with a proper product launch strategy.

Having invested approximately USD 500 Million in the marketing of the new operating system alone, Microsoft predicted that 50% of their users would switch to this version within two years from the launch. However, 18 months after the launch, only 8.8% of corporate users worldwide were running Vista. The research of Windows Vista launch has been done with a qualitative content analysis by analyzing secondary data from online documents about Windows Vista product launch and product development. Thus the research is by nature also a case study.

According to the main findings of this study the operating system was not tested carefully enough and the final edition had many performance and compatibility issues. It also turned out that the timing of the launch was far from optimal. Development speed turned out to be a problem for Vista, since the launch date was postponed few times and the product needed to be developed much longer than was planned. Vista's development units had communication problems and development of Vista was divided globally to too many locations. Microsoft also encountered trust issues among their customers due to continuous delays and poor results from product testing. Customers were not engaged to the product and product features did not please the public. Vista's aggressive marketing and lack of innovativeness also caused more problems for Microsoft.

Key words	new product development, product launching, Windows Vista
Further information	

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TIIVISTELMÄ

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	Lisensiaatintutkielma
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Tiivistelmä

Tämä Pro gradu -tutkielma pyrkii tuomaan ymmärrystä Windows Vistan tuotelanseeraukseen, joka oli vuonna 2007. Tarkoituksena on ymmärtää minkä takia Vistan lanseeraus epäonnistui eikä käyttöjärjestelmä vastannut korkeita odotuksia, joita Microsoftilla, medialla ja suurella yleisöllä oli Vistaa kohtaan. Tutkimuskysymyksenä on ”Miten Windows Vistan epäonnistuminen pystytään selittämään kriittisten menestystekijöiden avulla?”

Tutkielma tuo akateemista tietoa siitä, mitä voi tapahtua, kun kriittisiin tekijöihin ei kiinnitetä tarpeeksi huomiota tuotekehitys- ja lanseerausvaiheessa. Hyvin toteutettu uuden tuotteen kehitysprosessi ja tuotelanseeraus ovat tärkeitä yrityksille, jotka haluavat tuoda uusia menestyviä tuotteita globaaleille markkinoille. Microsoft odotti, että 50 % heidän asiakkaistaan alkaisi käyttää Windows Vistaa kahden vuoden sisällä lanseerauksesta. Kuitenkin 1,5 vuotta lanseerauksen jälkeen ainoastaan 8,8 % yrityskäyttäjistä oli siirtynyt Vistaan. Syitä Windows Vistan epäonnistumiselle etsitään kvalitatiivisen sisällönanalyysin avulla. Tutkimuksen luonteen vuoksi, kyseessä on myös case-tutkimus. Empiirisenä materiaalina ovat julkiset dokumentit, jotka on kirjoitettu muun muassa lehtiartikkeleiden ja tieteellisten julkaisujen muodossa lanseerauksen aikana, ennen sitä ja sen jälkeen. Teoreettisen viitekehyksen muodostaa uuden tuotteen kehityksestä kertova kirjallisuus sekä kriittiset tekijät, jotka vaikuttavat tuotelanseerauksiin.

Tutkimuksen löydöksien mukaan käyttöjärjestelmää ei ollut testattu tarpeeksi ja lopullisessa versiossa oli paljon ongelmia suorituskykyyn ja sen ominaisuuksiin liittyen. Lanseerausajankohta oli myös väärä tutkimuksen mukaan. Tuotekehitysnopeus oli pitkä, ja lukuisat viivästykset lanseerausajankohdassa, johtivat ongelmiin asiakkaiden luottamuksessa ja sitoutumisessa tuotteeseen. Microsoftin kehitystiimien välillä oli kommunikaatiovirheitä ja tuotekehitystiimit olivat globaalisti liian hajautuneet. Vista sai myös heikohkoja arvioita tuotteen testauksessa ja sisälsi ongelmia tuotteen yksityisyydessä ja turvallisuudessa. Vistan aggressiivinen markkinointi ja tuotteen innovatiivisuuden puute johtivat myös siihen, että asiakkaat eivät olleet tarpeeksi tyytyväisiä tuotteeseen.

Asiasanat	tuotekehitys, tuotelanseeraus, tuotelanseerausstrategia, Windows Vista
Muita tietoja	kriittiset tekijät tuotelanseerauksessa

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CRITICAL FACTORS IN PRODUCT LAUNCHING

Understanding the failure of Windows Vista

Master's Thesis
In International Business

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The originality of this thesis has been checked in accordance with the University of Turku quality assurance system using the Turnitin OriginalityCheck service.

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1 INTRODUCTION

The aim of this study is to understand product launch through launch strategy and product development as a contributor to success of product launches. This will be done using theoretical framework and conducting empiric analysis with secondary data on Windows Vista product launch. Product launch strategy determines how a product or service is introduced to the markets. There are a lot of products that are designed and created in a cost-efficient way and planned to meet the needs of the target group; however, market acceptance can never be guaranteed. Product launch, as well as the reasons behind its success or failure, is definitely a topic of interest. How does one execute an effective launch? What can be done to ensure that the product that is going to be launched will thrive in the market? These questions are worth finding answers to.

In some situations, a product, which may in theory be perfect for the target customer, fails to successfully enter the market because the launch was not carefully planned and executed. On the other hand, a product whose technical abilities may be inferior to those of a competitor can outperform the latter thanks to a good launch strategy and the way it is introduced to the market. In this research, the focus is on high-technology products in global markets.

1.1 Background to the study

Product launch is often the most crucial stage of the new product process. Empirical studies have consistently shown that proficient product launch greatly improves the chances of new product success, and even a superior product could fail due to poor launch strategies. (Cui, Zhao & Ravinchandran, 2011.) In academic literature, product launch is generally seen as one of the most expensive stages of the new product development process. Through customer-oriented planning and execution, product launch plays a central role in the success of new products. (Benedetto, 1999; Benedetto & Calantone, 1988; Cooper, 1979.)

Apple Inc. and its former chief executive officer Steve Jobs are good examples of how a successful product launch can contribute to the future sales of new products and product updates. The process of designing and creating new products is called NPD, which stands for new product development. Apple has long been considered as one of the best at creating needs for customers and launching new products. According to Apple, their product launches always include a clear reason why a product exists. They also have a simple, flexible and strong guideline for how a launch should be executed. They use storytelling

and always concentrate on features that the customers wish their products had, even if they realize that desire only after these features have been introduced in a product. (Roberts, 2016.)

Both the public and the media had high expectations for Microsoft's launch of Windows Vista in 2007. Having invested approximately USD 500million in the marketing of the new operating system alone, Microsoft predicted that 50% of their users would switch to this version within two years. However, 18 months after the launch, only 8.8% of corporate users worldwide were running Vista. The problem encountered lay in the fact that the operating system was not tested carefully enough and the final edition had many performance and compatibility issues. It also turned out that the timing of the launch was far from optimal, which all resulted in a situation where Windows Vista did not succeed, while Apple was able to successfully enter the market with their new MAC computer. (Schneider & Hall 2011.)

According to empirical studies, carefully planned and executed product launch strategy dramatically enhances the chances of the success of new products. Superior launch strategy is much more important that superior technical features when introducing the product to the market, as the latter does not guarantee that the product will break through and be able to maintain high sales throughout its life cycle. This is why launching is very often considered to be the most critical stage in the product development process, as it can determine whether the product will succeed or fail without even looking at any of its specifics, abilities and features. (Cooper 1979; Langerak, Hultink & Robben, 2004.) Market acceptance is the goal that developers of products are striving for, and the sales department's job is always more rewarding when the launch has been properly coordinated and executed. Therefore, new product launch plans need to be carried through in a way that the target audience can be attracted through communicating and leveraging the positioning of the new product. (Brian 1996.)

In the process of bringing a new product to the market, the launch phase needs to be paid extra attention to, as it is the largest investment in the whole process of new product development. This is due to the fact that when a decision for a certain product to be launched is made, the costs of marketing, production and other activities related to the product launch will usually exceed the costs of the previous stages of new product development (Glen 1993; Cui, et al. 2011.) Despite the acknowledged importance of this phase, the topic of product launch planning has been substantially under-researched.

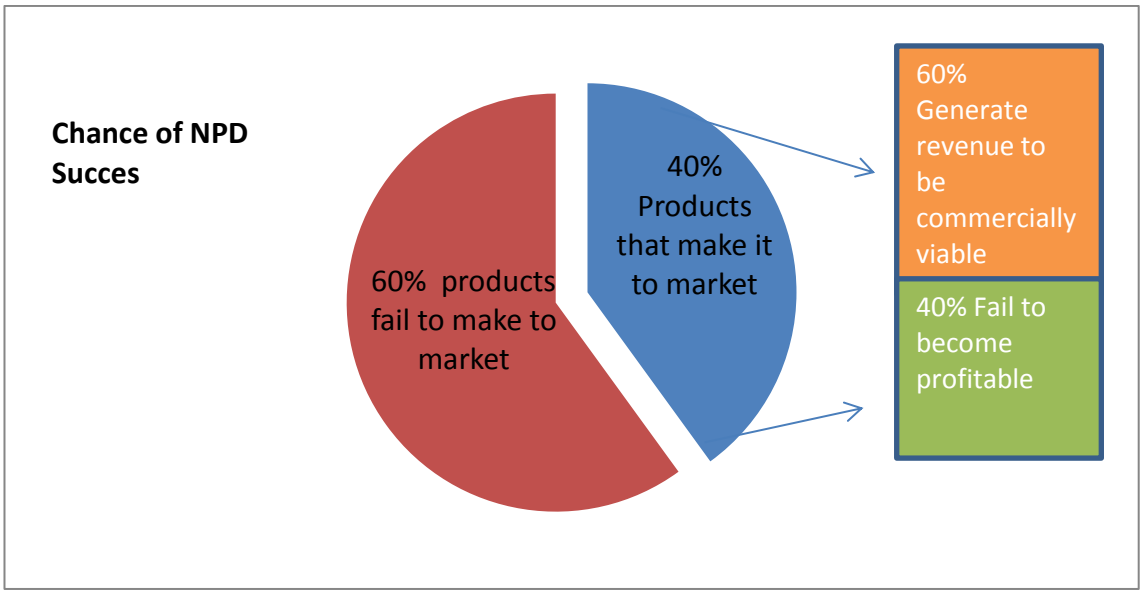

Figure 1: Chance of NPD Success (Schneider & Hall 2009)

A rough generalization is that out of all the products that are launched, only 40 percent will make it to the market and out of those 40 percent, only 60 percent will generate revenue that is commercially remarkable. This figure demonstrates the challenges associated with achieving success for new products that are being launched, according to a survey by Schneider and Hall (2011). According to Gordon (1991) and Baker & Hart (2007), development of a new product is based on teamwork, open collaboration and interaction among the teams that participate in the development process.

The ultimate success or failure of a product is defined by the customers' willingness to pay for it. Research, experimentation and testing should therefore be incorporated throughout the product development process, rather than after the product has already been developed. (Schneider & Hall, 2011.) Even if the specific product is technologically superior, its abilities and features, though very important, do not determine, let alone ensure, its success on the market. The following list by Lodato (2008, 89-90) demonstrates some of the reasons why a new product might fail to meet the market expectations:

- Missing a market window. E.g. Pontiac's *Fiero* was ahead of its time. It missed the window on the front end.
- Poor positioning. E.g. Coca Cola's *Classic coke.* Consumer expectations were not developed.
- Product failure. E.g. An earlier model of the Audi that had many functional problems.
- Shifts in purchasing habits.
- Market changes. The market for cigarettes has changed dramatically in recent years.

- Under-investment. Not staying with the product long enough.
- Invisibility. Not investing enough in promotion.
- Economic dislocations. E.g. Recessions.
- Poor channel support.
- Misread competition. E.g US semiconductor industry misread competition from Japan.
- No industry support. Lacking validation by industry gurus and analysts.
- Misunderstanding of real consumer customer needs.
- Political upheavals. E.g. Terrorist attacks and wars.

It is impossible to anticipate all these reasons but with careful launch planning and management the company can better respond to these.

1.2 Purpose of the study

The purpose of this thesis to understand reasons in product development and product launching that lead to Microsoft Windows Vista's failure. Theoretical framework will form the base knowledge that is essential for the empiric part of this study. Theoretical framework will consist of new product development theory and of factors that can be seen critical for product launches. This will be more strategic approach for this study. Theory part will try to explain product launches in a way that reader could understand what kind of issues should be taken care of when companies are conducting product launches. In addition to this, the aim is to find understand how companies could improve their product launches when critical factors are taken carefully into consideration. Windows Vista will be a kind of an example what can happen if product launch and product development do not go as was planned. Empiric part of this study will be presented with secondary data survey on Windows Vista's product launch concentrating on documents that have been studied or written about it. After reviewing the existing theory on product launch and the Windows Vista case, the following research question was formulated: *"How Windows Vista product launch can be explained with help of critical factors in product launching?"* In order to facilitate the research process and to provide further insight into the main research question, three sub questions were formulated:

1. What are the main critical factors in product launching?
2. How critical factors impact product launches?
3. How to make product launches more successful?

1.3 Structure of the study

First chapter presents the introduction for the study and motivates the purpose for this kind of a study. The second chapter "New product development process" presents a model for how products are being developed from a raw idea on a paper to an actual product that is being sold and customers can see it and touch. In the end of the chapter will be explained more how the product is pushed to the market and how it can be promoted. Third part "Critical factors in product launching" will be the second chapter of theory in this study. With help of this chapter reader can understand what kind of factors will effect to the outcome of product launching. In this chapter these critical factors are being sought and explained in a way that helps understanding the empirical findings of this research. Fourth chapter will summarize theoretical viewpoints and its main points.

Fifth chapter will illustrate methodological choices and reasons for why this kind of a study was executed in a way that it has been done. Sixth chapter presents the findings of this study and combines both empirical findings and theoretical viewpoints. Last chapter will summarize this whole thesis and presents main ideas of this study to the reader and provide more insight for findings and for possible future research.

2 NEW PRODUCT DEVELOPMENT PROCESS

In this chapter, the product development process will be explained with the help of theoretical framework. First, the journey from an idea of a product to a physical product ready to be launched to the consumer markets will be studied. After that, it is important to select a correct strategy for the launch. Timing of a product launch is a crucial decision, which managers should consider very carefully. Timing is critical and it will be a critical factor in the success of a product. The launch should also be monitored and evaluated, as it is important to be able to analyze the product launch results after it takes place. (Baker, 2007.)

2.1 Stages of NPD-process

Product launch is a large investment in the new product development process. In fact both Benedetto (1999) and Guiltinan (1999) see it as the largest investment in the whole process, as it involves the combination of both production and marketing costs after the managerial decision to launch has been made. Product launch is also the final stage of the new product development process. (Benedetto 1999, 531 Guiltinan 1999, 509.)

The new product development process consists of engineering, manufacturing, design and marketing activities. These activities should be coordinated in the development process across all functions and stages. Although the product launch itself is one of the final stages of the NPD process, the launch planning should begin already at the stage of the marketing strategy development and go hand in hand with product development and product testing. (Guiltinan 1999, 510.)

New product development process is a widely researched topic - there are as many theories and models on this topic as there are writers and researchers studying it. In this thesis, the new product development process will be illustrated through an activity stage model. According to Yelkur & Herbig (1996, 39) and Trott (2002, 212) the NPD process includes eight steps: idea generation, screening, concept development and testing, marketing strategy, business analysis, product development, market testing, commercialization and evaluation and monitoring. Commercialization is a term that is often used by researchers and professionals in the business field to refer to the launch stage (Yelkur & Herbig 1996; Benedetto 1999).

In new product development customer’s central role is emphasized. Therefore market acceptance is essential. In the development process, the ideas must be properly defined. These ideas then form into well-defined sets of attributes that are expected to please certain sets of customers. Product designs and models, market acceptance studies, the selection of customer segments and market selections are initiated in this order. The last step

is to carry out production studies. (Bingham & Quigley 1989.) The process is sequential and different stages take place one after another. The figure below (Figure 1.) demonstrates the flow of new product development and its different parts.

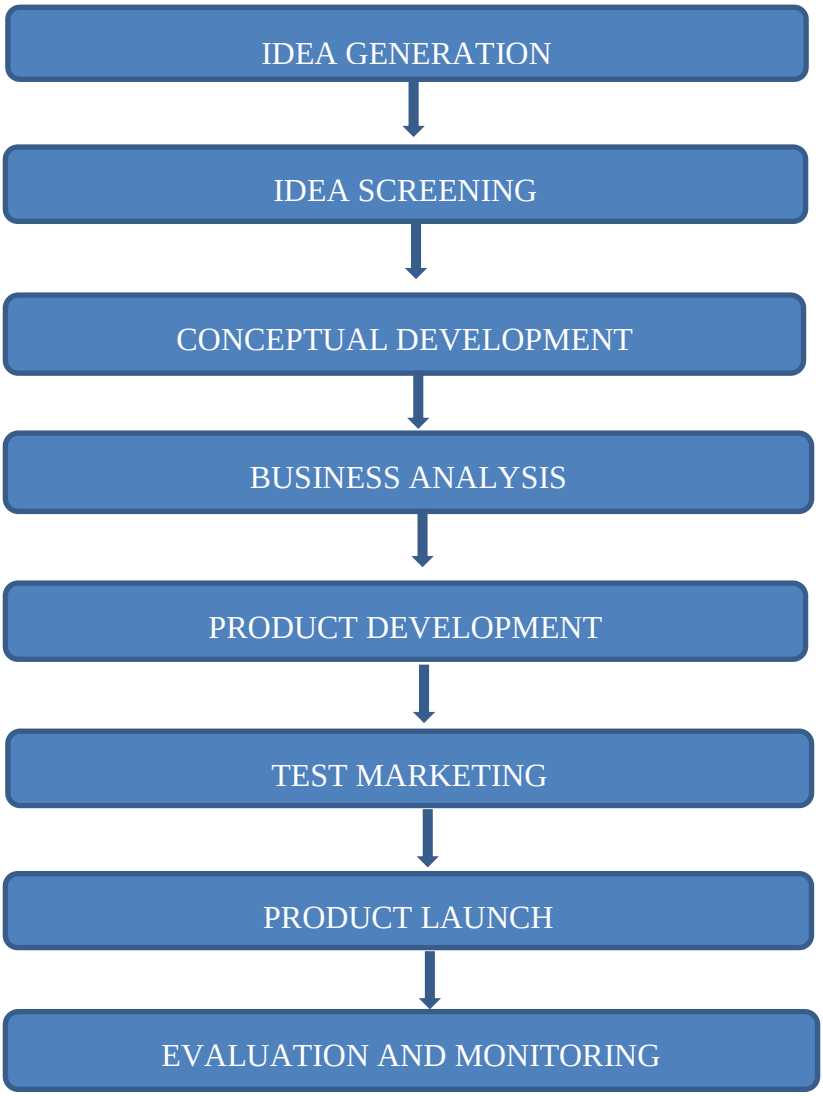

Figure 2: New Product Development process according to Yelkur & Helbirg (1996) and Trott (2002)

2.2 Idea generation

The development of new products in the NPD process, like everything else, starts with ideas. Bingham and Quigley (1989, 7) state that the main role in selecting and developing

ideas should be played by four decision-making departments: marketing, marketing research, engineering, and research and development. Such arrangement allows for the development of ideas that correspond to the company's mission, available resources and market environment, as well as ensures that this process moves along as swiftly as possible. Although this might negatively impact the degree of innovation, because of the fact that some ideas may be left out in the process. However this approach has been empirically proven to be an effective way of idea development. (Bingham and Quigley (1989, 7.)

Customer information is extremely important in the idea creation process. That is why a large number of companies pay a lot of attention to collecting valuable information from their present and prospective consumers. The data they receive is highly beneficial for the process of generating ideas. Traditionally, market researchers collect information from consumers at the center of the target market. This information is then evaluated by the marketing research department and passed on to the marketing department. Engineering and marketing departments then review the ideas to understand which of them should and can be implemented in order to meet the needs of the market. (Hippel et al. 2002, 1042; Bingham and Quigley 1989, 7.)

Marketing literature talk about several types of market research tools. One of the more traditional techniques mentioned previously is gathering data from the center of the target market, while a more progressive and customer-oriented approach called Lead User Method involves collecting information from the users that experience needs not yet known to the general public. These methods differ in several aspects. What type of users the information is collected from and the type of information that is being collected. A research comparing the results of using both data collection approaches was conducted for the 3M Company. (Hippel et al. 2002, 1053.) 3M is an American multinational conglomerate corporation with annual sales of USD 30 billion, which employs over 88,000 people around the globe and offers 50,000 innovative solutions touching virtually every aspect of modern life (3M, 2017).

In the survey conducted by Hippel et al. (2002) the LU idea generation method was found to be capable of generating more efficient results than traditional methods. The key is to find ideas with "good fits" that have a bigger chance of acceptance and receiving funding. The forecast sales for the products generated by the LU method were remarkably higher than those for the products developed using traditional methods. The adoption of the LU method was also able to create considerably more breakthrough ideas. The key finding of the research was that the product ideas generated by utilizing the LU process had the sales predicted for Year 5 to be more than 8 times greater than the sales for the product ideas generated in the more traditional idea generation processes. The exact numbers were USD 146 Million versus USD 18 Million. In addition to that, the LU process

ideas were regarded more innovative, “new to the world” type of products, which addressed newer, more original consumer needs. (Hippel et al. 2002, 1055.)

Flint (2002, 307) also adds that for enhanced product idea generation and increased likelihood of product development success, careful and profound customer understanding is vital. It ensures that the cycle time between success stories of new products is as short as possible. It also lowers the risk of the newly launched products being rejected or unappreciated by the target group users upon their introduction to the market. Deep customer understanding is not only about possessing the knowledge about existing needs of a consumer, but also about being able to predict what they might be in the future. Although such prediction abilities are highly important for the potential success of product launches, a large number of companies still do not have clear processes in place for anticipating these future customer needs. In marketing literature, theses process are often referred as ”customer value-oriented marketing information systems”. (Flint 2002, 307-308.)

Research work related to customers’ needs is very important for the front end of the NPD process. Nevertheless, NPD teams often do not pay enough attention to allowing the voice of the customer to be a building block to idea generation. As evident from Figure 1, new products fail at alarming rates, and the main reason for these failures is flawed processes completed in haste. (Flint 2002, 305.)

The idea generation process consists of reviewing and analyzing ideas produced on a large scale and selecting the most fitting and promising of them to move forward in the NPD process.

2.3 Idea screening

The phase that follows idea generation is idea screening. Although the stage of idea screening is just as important as the one preceding it, many companies make the mistake of advancing too quickly through the screening process to development stages during the new product development (Flint, 2002, 305). In the idea screening phase, the goal is to break the bulk of ideas down into small groups based on their chance of success and time horizon for actualization. The screening criteria pertain to finances, products and markets. Different teams inside the organization exchange ideas, evaluate them and share feedback. The responsibility of the engineering department at this stage is to evaluate whether the new product ideas are feasible technically, as well as from the point of view of available production resources. The marketing research team meanwhile collects customer information and evaluates the chances for the new products’ customer acceptance. (Bingham & Quigley, 1989, 9.)

Eventually, the most promising ideas are evaluated by the marketing manager in co-operation with the decision makers of the research and development, market research and engineering units. These ideas can then advance in the product development process. (Bingham & Quigley, 1989, 9.) Another, more traditional idea screening method involves several company managers and field experts going through the idea bank and assessing the ideas presented. (Flores & Toubia, 2007, 342; Kamp & Koen, 2009.)

Flint (2002, 313) discusses the importance of designing and adopting formal processes that will aid in developing thorough customer knowledge and understanding, as it will significantly increase the chances of producing successful new product ideas. With the failure rates of new product launches being as high as they are (Figure 1), as well as the constantly growing pressure of shortening the new product development cycle, it is vital for companies to find new ways of increasing the efficiency of developing new products. (Flint 2002, 313.)

To summarize, the main goal of the idea screening stage is to select the best, most promising new product ideas from the idea pool leaving out the ones, which the decision-making teams do not see as having enough potential to succeed in the market. (Kamp & Koen 2009.)

2.4 Conceptual development and testing

The aim of this stage is to clearly define the product ideas, which have been chosen to move forward in the development process and eventually be implemented. These ideas should then be formed into clearly formulated sets of attributes, which are designed to evoke interest in certain sets of consumers. The next step would be turning these attributes into detailed design blueprints, which is achieved by accomplishing the following tasks. First, the selected product designs need to be made available for production and initial market testing. Then, market acceptance studies on the present product ideas must be executed, upon which target markets and customer segments need to be determined. The final stage of the process marks the initiation of the production studies. (Bingham & Quigley 1989, 10.)

It is crucial to gather information on the response of the market towards the preliminary product design. Engineering, marketing research, and research and development units need to closely cooperate when working on the initial prototypes, as well as during the product testing to address any issues and carry out necessary alterations. In order to identify target markets, all team members have to be involved in communication, evaluation

and analysis. After the market research team has assessed the potential of the ideas within the current and prospective markets and engineering has evaluated their technical feasibility. The marketing unit then analyzes this information and eventually compiles a list of possible target markets for each of the ideas. Before the manufacturing of the products can begin. It is crucial to make sure that all of the product designs have been properly and carefully assessed and their manufacturing feasibility has been established by the marketing unit. The manufacturing unit then assesses the situation and establishes the availability of resources and information needed for the successful initiation of production. (Bingham & Quigley 1989, 10.)

Conceptual development and testing is based on the communication between different teams, as well as utilizing the information collected from customers. In this sense, conceptual development and testing is a rather difficult process. It is greatly susceptible to mistakes as different people provide very different feedback and react to new product concepts in very different ways. Especially if there is no learning or testing period. One of the biggest challenges at this stage is deciding whether the new product idea should be put into the mass manufacturing process. This is a challenge for the managers where the marketing research unit plays a great role. The marketing research source can also come from outside of the company as an advisory unit to aid the managers in the decision-making process. (Trott 1998, 148.)

Figure 3 illustrates how different supporting objectives are linked together and influence each other through the prism of customer needs and preferences. With the aid of these supporting objectives the target market can be profiled. The objectives have effect on each other and together they impact the preferences and needs of customers and vice versa. (Baker & Hart 2007, 278.)

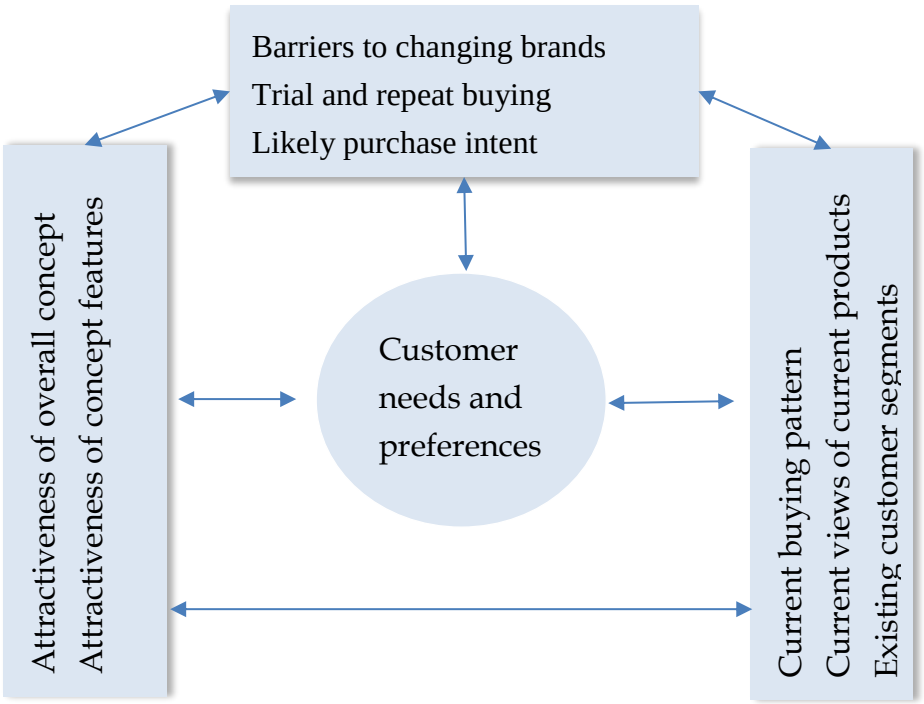

Figure 3: The idea of concept development and testing (Baker & Hart 2007, 278)

2.5 Business analysis

The main idea in business analysis is to assess whether a product will be successful and profitable in case the company ultimately decides to produce it. Analysis will provide information related to the costs that the manufacturing of the product will involve. Companies dealing with NPD processes also use this tool to gain valuable information about the profits that the product is expected to bring to the company in the future. As well as to exclude inappropriate ideas and escape unnecessary costs. (Queensland 2016.) According to Queensland (2016) companies can carry out business analysis by following these steps:

- Estimating the product price by reviewing competitors and market research, as well as analyzing customer feedback
- Identifying the product's market potential by reviewing market information and analyzing the sales of existing products. The key point here is to determine the present level of market activity and customer interest in similar products.

- Forecasting sales volume of the new product based on the information on the size of the market and company's customer base, as well as the needs of those customers.
- Calculating the break-even point by making profitability estimation calculations. The break-even point refers to the amount of product that has to be sold in order to cover the company's expenses incurred by the production.
- Determining the minimum sale price by calculating the safest margin, at which the company can afford to sell the product.
- Considering the lifecycle of the product by assessing the long term opportunities for the product in the target market. How long will it take to sell enough product to gain a decent return on investment?
- Defining the marketing strategy, which will help in positioning of the product in the market place. At this stage, relevant market and product information needs to be analyzed and assessed, as it is absolutely vital in the marketing of the product. (Queensland 2016).

Business analysis can be seen as a tool for executing marketing tasks, which are required for applying new product ideas into sets of characteristics that fulfill customers' needs and desires (Song 1997, 126).

2.6 Product development stage

The output of the product development phase is a prototype of the final product. At this stage the idea that began as a mere sketch on paper gets to finally become an actual physical product. All of the design issues and technical problems have been worked out, and the focus shifts to predicting consumer reactions and developing entry strategies. At this point as the launch of the product approaches. It is important that the team's attention moves from technical matters towards market concerns. (Bingham & Quigley 1989, 10.)

At the product development stage, the information gathered during the initial stages, or the "fuzzy front end" of the NPD process forms the foundation for subsequent operational planning activities. Information obtained during the business analysis phase is used to enhance commitment of the team members and foster multifunctional information input. Due to a certain degree of uncertainty that any NPD project entails and the possible negative impacts that it can bring. Risk planning becomes widely important as the process goes further. This requires careful attention from the management. Multiple studies have showed the effect that the project structuring has effect on the success of the NPD projects. Milestone plans with clear goals and decision rules are recognized as important elements of process management. (Salomo et al 2007, 289-290.)

According to Baker & Hart (2007, 330-331) product testing and development is supposed to ensure that the new product will bring the benefits that were pointed out in the concept testing stage to customers to fulfill their needs. Overall the purpose of testing the product and developing it further is to reduce the risk of having to deal with certain issues that might come up later in the launching phase.

Bingham & Quigley (1989, 11) state that there are three core tasks that should be accomplished at this stage. Firstly management needs to ensure that manufacturing process is completely under control and an adequate amount of product can be produced according to the schedule. This is absolutely critical as the whole project can be jeopardized if there is a failure in production. The second task is to verify reliable suppliers and material deliveries, which will help ensure smooth manufacturing process without interruptions. Finally the third task is to prepare for market simulations, market entry and market testing by making sure that all of the diagrams, working models and design prints are up to par. (Bingham & Quigley 1989, 11.)

Both Bingham & Quigley (1989) and Salomo, et al. (2007) talk about the importance of the commitment of teams, since most disciplines within the company need to work together. The main objective the NPD team should have at this stage of the development process is to produce the final product for the market. The management needs to keep the process moving along as effectively and quickly as possible. So that the teams have enough time to spot and fix possible issues in the product. During this phase everything is based on team work and communication between the departments. As well as on equal communication from the management and executive levels. (Bingham & Quigley 1989, 11; Salomo, et al. 2007, 289-290.) One of the most important issues is the synergy between production, marketing and engineering departments, as well as R&D department. The authors carried out a research, which concluded that effective team work and synergy are the main reasons for product success upon the completion of the new product development process. They also studied product launches that ended in a failure and found that the key reason for failure was often insufficient market research. (Calantone and Cooper 1981, 48-60.)

To make sure that the production standards, final product delivery and quality, are maintained. There has to be clear communication with production control and quality assurance groups. These units make sure that everything goes according to the schedule and quality standards are upheld. At this stage the decision to move the process along is made with developing cost projections and assessing expected profitability of the product. If there is high possibility of success, i.e. high expected profit paired with insignificant profit stream variation, the product manager can forward the product into the commercialization phase. (Bingham & Quigley 1989, 11.)

2.7 Test market

Prototypes that have been developed so far and have survived the product development stage will proceed to the test market stage. These products are still quite vulnerable and they cannot yet be forwarded to commercialization, or launched. Introduction to test markets is required. (Bingham & Quigley 1989, 12). In this phase the idea is to perform market tests for the new product in certain locations. In these locations the product is offered for sale. When the information on the results of test marketing has been collected, the decision can be made to pull the product in before its full-scale launch. Customers do not know that they are participating in a "laboratory field" experiment, where sales statistics of the product are analyzed and used to assess whether the current version of the product should be launched. The information gathered from this experiment is extremely valuable. Because in this stage the product can still be modified before it goes into the actual mass production. Also the company can gain significant insight into predicted production costs, which can lead to a decision to change the launch strategy. (Gordon & Marino 1991, 27-31.)

The main objectives of the management here are to forecast national sales and evaluate the mix elements working together. These objectives give the NPD team a possibility to evaluate the pace of gaining distribution. These also give possibility to assess the speed of gaining trial and observe the reaction of competition. This information will help to decide against or in favor of the full-scale launch and empower the training of sales, production and distribution personnel. What the financial department is looking for is proof of financial growth for the investment. (Baker & Hart 2007, 360.)

In the development cycle, there are three different options for the management, which have to be carefully considered at the test marketing stage. When the product development process has progressed this far and a large amount of capital has been invested, there is increased pressure to bring the project to success. The options for management are:

- To conduct further market testing
- To turn down the product
- To proceed with production of the product

As the process goes further the management has to demonstrate an even stronger commitment to the process. Risks are increasing all the time when more and more costs become involved in the project. (Gordon & Marino, 1991, 27.) Baker et al. (2007, 363) suggest test marketing to be done based on six different steps:

1. Recruit subjects
2. Test attitudes and beliefs
3. Expose subject to advertising stimuli
4. Subject left to purchase
5. Subjects interviewed

6. Subject may be post-contacted.

After test marketing, company should be able to better understand the market situation in order to determine a suitable price range for the product. The marketing plan can be refined and pilot runs for production and distribution can be executed (Trott 1998, 101). Ideally test marketing should be able to help the organization to not only determine the chance of market acceptance of the new product. It should also understand whether there is necessity for product improvement or reformulation. Or whether any changes in the manufacturing process have to be made in order to ensure that the product is ready to be mass-manufactured. Production and engineering units can then fix any possible issues before the launch of the product actually takes place. (Gordon & Marino, 1991, 29.)

Ultimately the intelligence gathered during the test marketing phase is extremely valuable helping the management decide if the product needs any alterations or modifications. This data includes information on customer acceptance, sales figures and competitor analysis. Obtained feedback can also be used to identify alternative entry strategies. At this stage, Marketing should keep close communication with the financial department in order to determine the relationship between product pricing and sales and its effect on the product profitability. Also operational budgets need to be reviewed and finalized. (Bingham & Quigley 1989, 12.)

The information acquired in the test marketing phase should be enough to provide the marketer sufficient evidence to assure the management for key decisions. These are product commercialization, the need to postpone the launch or completely abandon the product and shift the focus towards a different project or idea. (Bingham & Quigley 1989, 12; Gordon & Marino 1991, 27-31.)

2.8 Commercialization

At this point, the sales rates should be constantly increasing and most of the activities aimed at aiding with this should be in practice. Market launch should thus include all the early product lifecycle activities. These are then aimed at improving sales, profit margin and revenue. (Osswald, et al. 2016.)

At this stage, an idea of a product has developed into a physical form of an actual product, which is ready to be launched to the markets (Bingham & Quigley 1989, 12). The information from the test marketing has provided sufficient information and valuable data to make the decision to begin the product launch. The commitment that a company is about to make to the product when it launches is both psychological and financial. At this point, the decision maker has to calculate the total investment that includes the sunk costs and costs of the launch. And also assess whether the launch is profitable based on the expected revenues. The psychological problem for decision makers is that even if the

calculations show that the expected returns will not be enough and it would be wiser to abandon the project. They may think that it would mean throwing all of the money, which has been invested into the project, away. It is also generally very difficult to abandon something that you have created from scratch and invested a lot of effort and time into. Sometimes even when the tests show that it would be more beneficial for the company to postpone or abandon the launch of a product, it still ends up getting launched due to the psychological and financial commitment to the project. (Baker & Hart 2007, 370-371.)

The major issue for the organization in the launching phase is inability to predict the future and say for certain whether the product will be successful. This is why the early stages of the NPD process are so important - all of the information the company obtains and calculations it performs during those stages is everything it will have to rely on further in the process. The psychological pressure is very difficult to overcome, because decision makers can only make assumptions and predictions about the future and in the launch phase they need to have great belief in the product. When the product is just about to launch, the drive to push it forward is strong. Possible abandoning usually happens during earlier stages, when serious flaws are present in the development or in the product concept. (Baker & Hart 2007, 371.)

According to Baker & Hart (2007, 371) there are three general stages in assessing the chances of the product launch failure or success. The original reasons for believing that there is an opportunity to break into the market need to be reevaluated and reconsidered. The aim of creating a new product is to meet the demand and seize the market opportunity with an adequate cost to both the buyer and the seller. It is important to ensure that such market acceptance will happen. The last step is to efficiently organize and perform the launch. The most probable reason for the failure of a new product is often poor understanding of the market. This is why it is crucial that new product development is monitored and researched continuously throughout each step of the process, so that the product can adapt to the ever-changing market. (Baker & Hart 2007, 371.)

In their studies, Montoya-Weiss & Calantone (1994) and Cooper (1979) discuss that product launch activities in the new product development process are crucial for the success of the launch. They also state that the organization's management can directly affect most of the elements that have influence over the product's possible success. In order to increase the chances of a positive outcome, organizations have to put more effort and pay more attention to new product development and product launch practices.

Benedetto (1999) studied 200 different product launches that had taken place before the year 2000. The aim of the study was to determine what kind of activities were most closely related to the observed success of the launch in the target companies' product launches. The considered objectives were overall profitability and competitive performance goals. Target companies were asked to share their insights in regard to how well they executed the activities, which turned out to be the most crucial for the success of the

launch. The study showed that in successful strategy development, logistics played a major role. Those launches, where greater attention was paid to logistics in various functions of the process, such as distribution promotion, sales, inventory and service planning, were more successful. In spite of the importance of logistics in the new product development, a very limited amount of empirical research has been done on this topic. (Mentzer, Flint, & Hult 2001; Mentzer & Williams 2001.) In case of the least successful product launches, there was an obvious lack of focus on logistical activities compared to the most successful launches where companies clearly paid much attention to them (Benedetto 1999, 540). The companies that were more proficient in manufacturing and engineering seemed to have better profitability in relation to competing products. Higher market share was also achieved among the respondents by improving logistical activities in the after-sale service planning. (Benedetto 1999, 540.)

When it comes to the reasons for product launch failures, interruptions in delivery logistics and promotional issues were more critical than technical problems. The study by Benedetto also showed that timing of the launch is just as important as careful planning and execution of strategic and tactical activities. (Benedetto 1999.) Product launch timing is critical for maximizing the overall profit of the launch. Thus, timing during the planning and commercialization phase can be a decisive factor for whether the launch will be a success or a failure. (Yang, Ni, & Wei 2011.) Tactical and strategic decisions and variables will be studied in the next chapter to deepen the understanding of the importance of timing and determine what the best possible time gap for a successful product launch is.

3 CRITICAL FACTORS IN PRODUCT LAUNCHING

In this chapter strategic part of product launches is covered. The purpose of this chapter is to understand factors that has an effect to the outcome of product launches. These will include customer oriented approaches and important things that should be paid attention to in planning the launch.

3.1 Role of trust

Customer involvement is an important part of product development. This is why companies try to include customers in the development of products at an early stage. Customers' creative potential is used to help the development of a product. The the goal is to get the customer eventually be motivated to buy the product. (Laursen & Salter 2004.) In the past studies on new product development it has been talked about the power of positive and negative attitude towards services, products, and sellers from the customer's perspective. This is generally seen as something that can have a great effect on consumer behavior and is an important influencer on whether the customer will buy the product. (Benedetto 1999; Fellner & Maciejovsky 2007.)

It is essential to gain information on how customers respond to innovation, because the general attitude towards it will have an impact on the success of a product launch. It can be said that introduction of a new product is always a much easier process when customers have a positive attitude towards innovation and are ready to establish a relationship with the product. Conversely, the product launch can turn out to be extremely difficult when customers have a negative mindset towards new innovations. (Nienaber & Schewe, 2014.)

Trust is also a very important factor of success in new product launches. Creating trust between customers and the company can be seen as a goal that a company should strive for. (Bstieler 2006, 63.) Furthermore, trust is a crucial long-term success factor in product launches and gaining trust is especially important in industrial buyer-seller relationships. (Searle, et al. 2011; Kwon & Suh 2004.) By establishing trust, organizations can reduce the customers' perceived risk associated with investing in innovations. Trust is also exceedingly important in business relationships and the significance of trust is acknowledged widely in literature on innovation management. (Wang, Yeung & Zahng 2011; Schleimer & Shulman 2011; Koskinen, et al. 2003.) The following figure (Figure 4) illustrates the creation of relationship commitment in more detail.

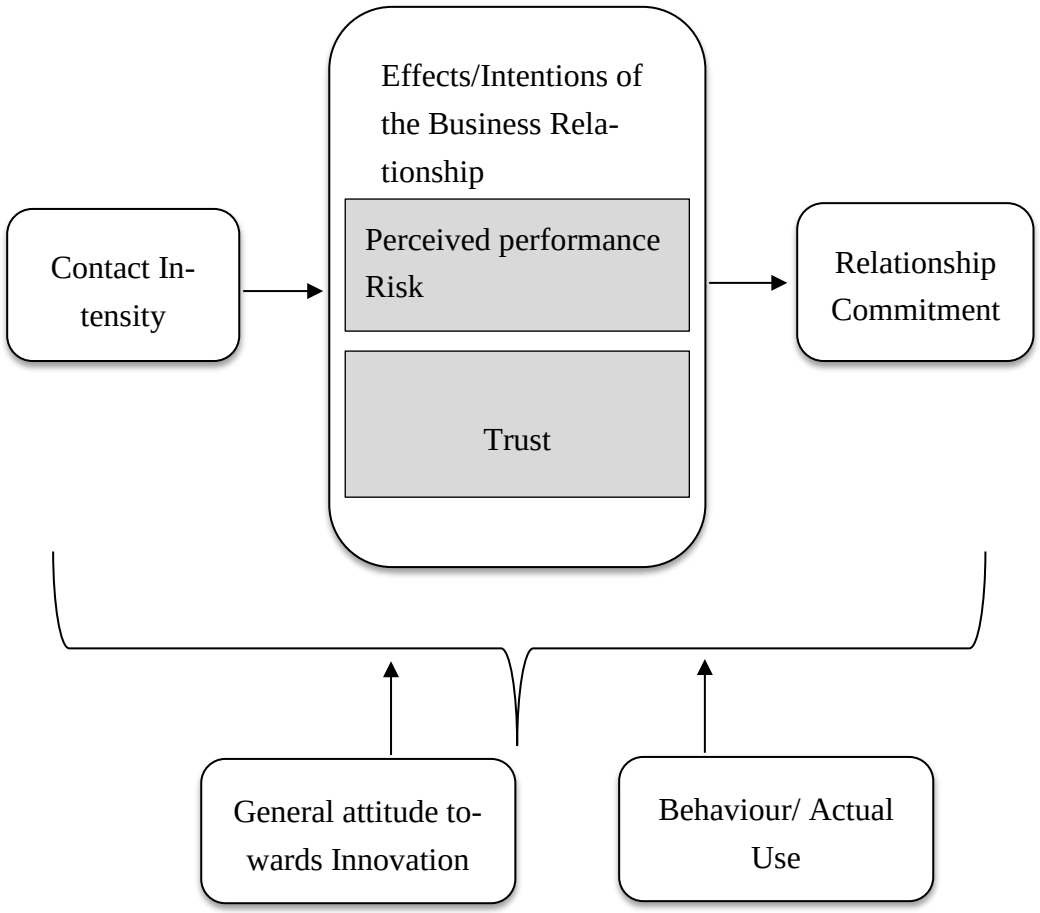

Figure 4: The willingness of customer to invest in the relationship in the future (Nienaber & Schewe 2014, 6)

In the research conducted by Nienaber & Schewe (2014) 490 different companies in the field of medical engineering market were studied in regard to how trust can be used as a mediator to the concept of perceived risk reduction in order to enhance the relationship commitment through assessing contact intensity in the process of launching new products. The results of the study showed that contact intensity, i.e. the intensity of the supplier's contact with the customers in the development phase, has an effect on building trust with the customer. This effect is positive and has a highly significant influence on the customer in terms of perceived trust. Furthermore trust is the main factor that has an impact on the customer's relationship commitment. It is crucial for the supplier to be able to influence customer behavior, as well as the general attitude towards innovation. (Nienaber & Schewe 2014, 7.)

Relationship commitment means willingness of a customer to invest financial, physical and other resources to the relationship. It is important to achieve that between suppliers and customers in product launches. (Morgan & Hunt 1994; Sharma & Patterson 1999.)

3.2 Development speed

In order for companies to thrive in the competitive global environment, they have to be ready to address exponential developments in technology and constant changes in customer demand, which contribute to the reduction of product life cycles. This means that nowadays firms do not only need to develop new products. But they have to develop them faster and more efficiently. This has made innovation speed an important factor in the new product development success. (Moreno-Moya & Munuera-Aleman 2016, 750.)

In academic literature and studies, development speed and development cycle speeds and their effect on new product profitability and launch success have been researched by Langerak & Hultink (2006) and Moreno-Moya & Munuera-Aleman (2016). Langerak & Hultink (2006) studied 233 companies, which manufacture industrial products in the Netherlands. From the research it turned out that when companies are able to reduce the cycle times and increase the innovation speed there is a positive effect on new product success. (Moreno-Moya & Munuera-Aleman 2016, 763; Langerak & Hultink 2006, 221) Both studies carried out by Langerak & Hultink (2006) and Moreno-Moya & Munuera-Aleman (2016) discovered an inverted U-shaped relationship between the profitability of a new product and the development speed. According to Langerak & Hultink (2006, 221), "an initial increase in development speed boosts new product profitability but additional increases become detrimental after a certain point".

Moreno-Moya & Munuera-Aleman (2016, 763) state the following: "When development speed is low, increasing the development speed has a positive impact on performance. However, when development speed becomes too high, any further increase will diminish new product performance." It is also vital to make sure that the innovation process does not take too long, as there is always a risk of the company's competitors developing the same kind of product that would compete for the same customers. The development process should not be too quick either, because it involves a lot of risks. Furthermore, the timing of a launch will eventually determine the success depending on the strategy that the company chooses and how well they perform at finding the strategic window. (Moreno-Moya & Munuera-Aleman 2016, 763.) The following figure (Figure 5) illustrates the importance of development speed and finding the sweet spot.

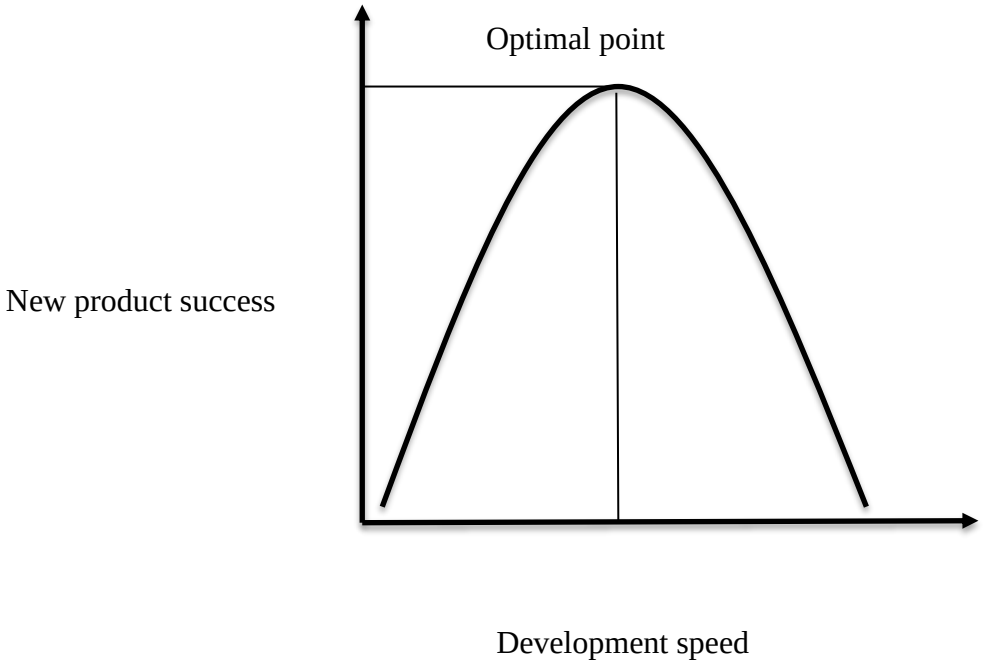

Figure 5: The relationship between development speed and new product success. (Langerak & Hultink 2006, 205; Moreno-Moya & Munuera-Aleman 2016, 758)

The curve indicates that when the development speed becomes too high, the optimal point is missed as speed becomes counterproductive. This is explained by the fact that when the new product development is accelerated, the hidden costs will increase. This also presents greater technological risks and incurs growing market uncertainties. Moreover, there is a risk of trivial innovation, which drives out more profitable breakthrough innovations. (Crawford 1992.) The left side of the curve shows that it is profitable to increase the development speed due to the fact that it increases the new product profitability in the commercialization phase. The benefits that the company will get include getting the first choice of profitable segments, scale effects and experience effects. They will also benefit from the formation of favorable buyer awareness and preferences, as well as preemption of resources. (Langerak & Hultink 2006, 205.)

It is also important to distinguish the difference between launching speed and development speed. Launching speed means the time in between when the product has been developed and is ready to be launched and the time when it eventually will be launched. (Moreno-Moya & Munuera-Aleman 2016, 763.) The relationship between launching speed and new product success was also studied by Moreno-Moya & Munuera-Aleman (2016).

Launch strategy is a key determinant for the success or failure of new products. Thus, when companies are able to introduce new products to the market more quickly, it will have a positive effect on the outcome once the product has been developed. Launching speed refers to the timeframe of the commercialization process, while speed in the context of development time refers to the timeframe of the whole new product development process where the actual physical product is being created. (Moreno-Moya & Munuera-Aleman 2016.) The relationship between increased launching speed and new product success can be illustrated by the following figure (Figure 6.)

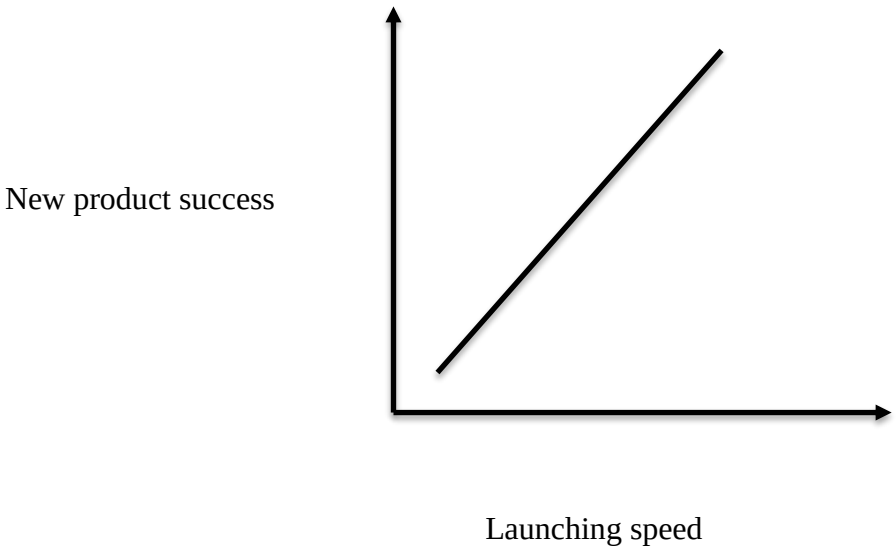

Figure 6: Relationship between launching speed and new product performance (Moreno-Moya & Munuera-Aleman (2016, 759)

On the graph, launching speed is represented by the X axis and new product success by the Y axis. It is evident that by increasing the launching speed it is possible to make the positive outcome of the new product performance more likely. The relationship between the two can thus be considered linear. When companies want to execute new product commercialization effectively, it is always a demanding and puzzling task. In the long run, launch strategies are the key factor in the success or failure of a new product. (Hultink, et al. 1997.) This means that when the product has been developed and is ready to be launched companies may lose their competitive edge if they wait too long for the

launching. Rival companies have maybe developed products that are similar to them by that time and are ready to launch them. R&D department may be more in charge and involved in development speed. And marketing unit is perhaps more worried about the launching speed. (Moreno-Moya & Munuera-Aleman 2016, 764.)

3.3 Timing of product launches

In product launching, the timing of the launch plays a big role in determining the success of the whole event. In this context, launch means the entry point into a specific market (Osswald, et al. 2016, 6; Guiltinan 1999). Companies need to carefully consider the timing question - when should the product enter the market? Competitive advantage can be gained by utilizing time-based strategies. When a company is the first of its kind to launch a product in the specific market, it is referred to as the "first-mover" strategy. The company can also be quick to launch a product after someone has already entered the market with a similar one. This strategy is called the "fast-follower" strategy. The question of launch timing and when it is better to enter the market is one of the most frequently examined strategic launch decisions. Carbonell and Rodriquez (2011) have researched the theory of being the first-mover and how being first in a new market can lead to a greater economical position. Being an early introducer, the company may get a chance to charge a better price and benefit from the increased length of the product's sales life. (Moreno-Moya & Munuera-Aleman 2016, 758-759.)

According to Osswald et al. (2016), earlier market launches provide the company with a window of opportunity to acquire a superior reputation to aid in creating customer experience and constructing a barrier with switching costs for the customers. Conversely, introducing an innovation to the market can have a negative effect on the new product's profitability. In fact, when a company introduces a product to the market after the first innovators, the market potential is better, as it becomes stronger over time. This means that later launches may have a lower risk of being unsuccessful. In addition to that, new products that are launched at a later date can benefit from technical modifications. Products can be improved and upgraded and, ultimately, better positioned in comparison to the products that are launched early. (Osswald et. al. 2016, 6.)

When management contemplates different strategies for determining the best timing for the launch, the timing issue is closely related to the business strategy of the company. This includes for instance the questions of whether to take the leadership and be first in the market or go the other way and choose to be a follower. Launch timing thus has a great influence over the new products' success. As for to the business strategy, all the product-related processes need to be lined up with it. (Calantone, Schmidt & Benedetto, 1997; Hultink et. al. 1997.)

Manufacturing and marketing processes have a positive effect on the timing of market launch when they work in close cooperation and are well coordinated. As discussed in previous chapters, cooperation between different units is widely important in the development phase. This is also true when it comes to planning the launch and contemplating launch timing. Many international business organizations have cross-functional teams. These teams can impact the likelihood of a successful launch, as proper planning helps to

avoid many obstacles and difficulties during the launch phase and leads to a better understanding of the targets of the launch. When the cooperation is good, deciding on proper timing for the launch becomes easier. (Osswald et. al., 2016, 5.)

Guiltininan (1999, 511) has identified six different classes of new products. They are as follows:

- New-to-the-world products
- New (to the firm) product lines that enter established markets
- Additions to existing lines
- Improved/revised products re-entering established markets
- Repositioning
- Cost reductions

Most of new products are represented by the first four of these and they are also associated with the most difficult launching circumstances. New-to-the-world products need to shape demand for the new product category - this is referred to as primary demand. With second and third types, key peculiarities can be identified in terms of the type of demand a launch planner must influence (showed in the figure below). Product improvements are supposed to create new demand from the company's past buyers, while new entries are aimed at acquiring a share of the current market. To reach these diverse demand goals, the launch plan must aid in encouraging different kinds of buying behavior patterns, i.e. diffusion and adoption, migration, as well as trial and repurchase. (Guiltinan 1999, 514.) The following figure illustrates the desired buying behaviors depending on the degree of innovativeness of a new product.

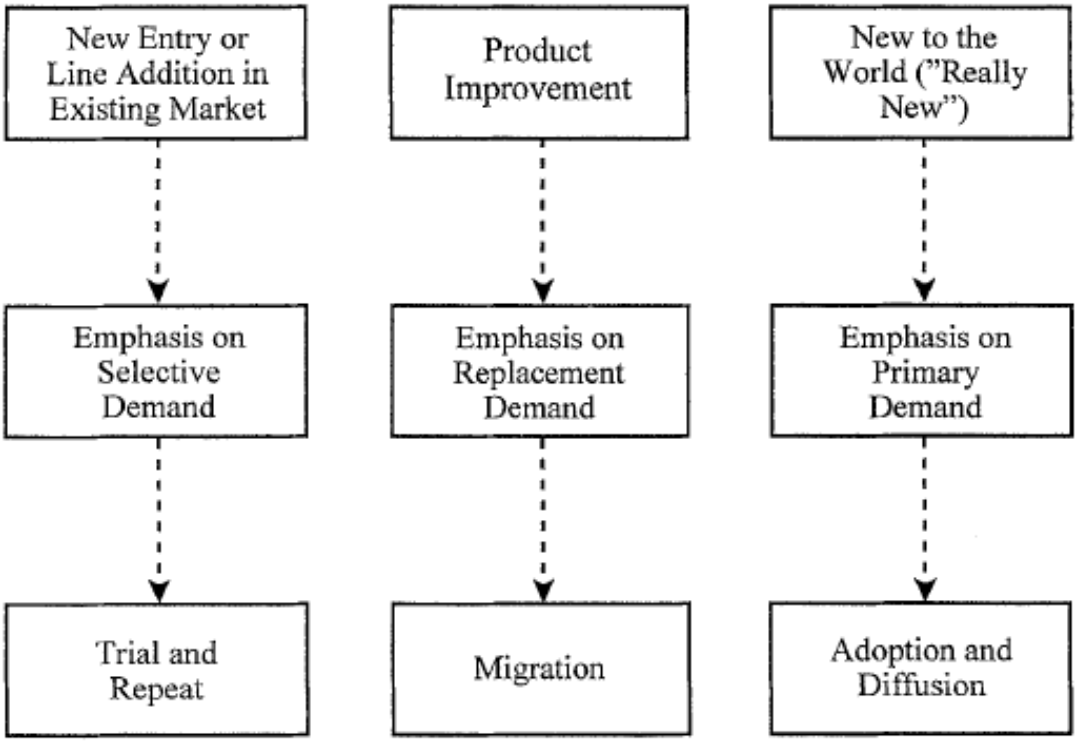

Figure 7: Degree of innovativeness of new products and desired buying behaviors (Guiltinan 1999, 512)

In the figure presented above, trial and repeat is a behavior that can be expected when the product that is being introduced is not very new to the market. In this scenario the adoption decision is normally made without significant search or consideration. Pepsi is an example of this kind of products, as it represents variations in content but it always serves the same purposes when a new Pepsi taste is introduced. Trial purchases are useful for customers when risks associated with the purchase are minimal. After these, trial purchases customers decide whether they want to keep buying the product or not. Customers' need for information is low, so the decision to buy mainly depends on advertising and other promotional methods. Since these product are not "new to the world", they do not often have major incremental advantages over existing products. (Guiltinan 1999, 511-512.)

In cases when there are remarkable upgrades or changes made to an existing product, customer migration is the desired buying behavior. The challenge is to get existing customers to migrate to the new product. Guiltinan (1999) used Microsoft's Windows 98 and Ford's 96 Taurus as examples of this kind of products. There are two types of situations when migration is desired. The first one is when the new product provides a new price-performance option that is meant for the market segments that are looking for improved

performance. Second case is when the new product is an upgrade, which acts as a substitute for an existing product. The problem is if the management fails to get customers to migrate on their next purchase - in that case the possibility to lose the customer is very strong. Customer's willingness to adopt new products depends on their own evaluation of the costs and benefits that the switch will bring. (Guiltinan 1999, 512.)

The last strategy in the presented figure refers to adoption and diffusion as a desired buying behavior. When the product is really new, the adoption process is also slower, because customers are very cautious with their decision making. This leads to a situation where cost and time involved in gaining approval increase. Word of mouth becomes increasingly important for the customers contemplating their buying decisions. Launch activities here are targeted at innovative implementation. However, later entrants to the market can target late adopters. (Guiltinan 1999, 512-513.)

3.4 Launch decisions and marketing plan

In the product launch literature, two clear categories of launch decisions are generally recognized. They are tactical and strategic launch decisions. (Benedetto, 1999; Guiltinan, 1999) Strategic decisions deal with questions related to the market and product topics. The questions that need answering can be for example the following:

- "How innovative the product should be?"
- "What kind of market the product should be launched into?"
- "What the competitive stance should be?"
- "What the competitive positioning should be?"

Strategic decisions are characterized by the fact that changing them in the later stages of the new product development process is often costly and challenging. These strategic issues are often dealt with in the early steps of new product development process. Tactical launching decisions deal with marketing issues, such as decisions concerning the marketing mix. These problems deal with basic marketing topics like:

- Product
- Branding
- Pricing
- Advertising
- Distribution

(Brecht, et al., 2016, 2.)

Tactical questions are usually considered and dealt with after the strategic decisions are made. Tactical issues are thus altered during the later stages of the new product development process. However, these decisions are not always made strictly after making

strategic decisions, but they are for the most part subjective to strategic decisions, which have already been finalized. (Benedetto 1999, 531.)

The marketing plan can be developed over the course of the new product development process. Marketing activities are usually connected with stage-gate approaches to development. (Guiltinan 1999, 2.) Stage-gate is a registered trademark of the "Product Development Institute Inc". It is a method of driving new products to the market. It benefits from using a launch system that has been well documented. The process is concisely outlined, focusing on how the system should work. The process, however, is not linear. All in all, the process makes decision making easier, and it includes, for instance, criteria for success, scorecards and electronic and virtual gates. The main idea of the stage-gate approach is to use open innovation. (Cooper 2008.) The following figure illustrates the structuring of marketing activities.

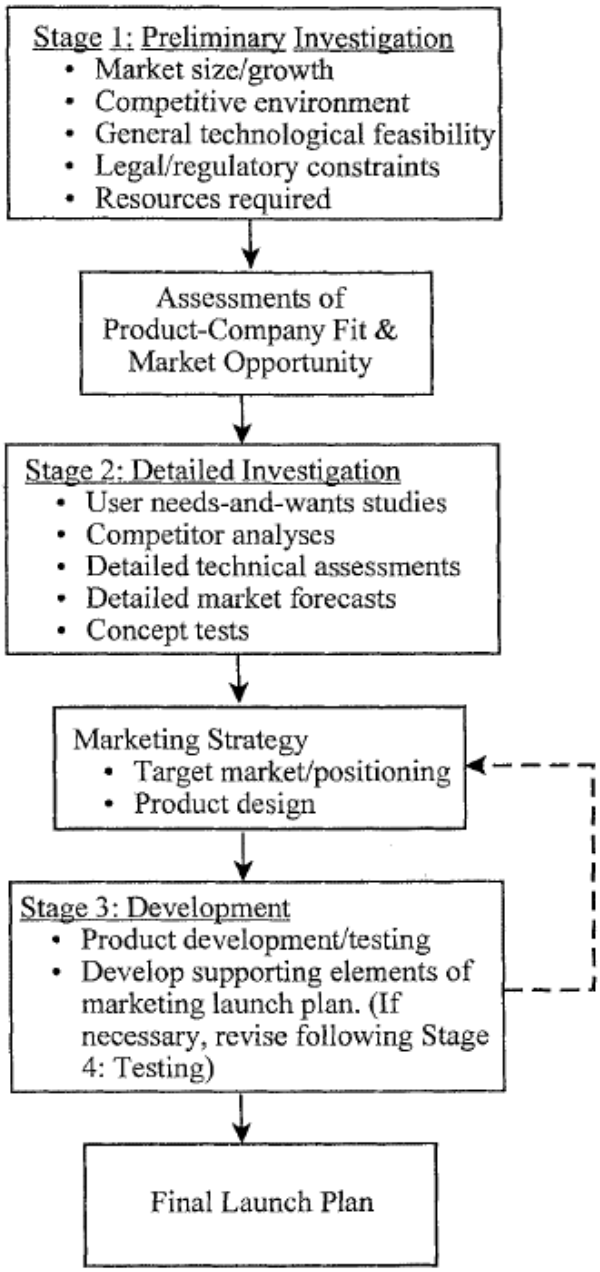

Figure 8: Development of marketing plans across stages of the new product development process. (Guiltinan 1999, 3)

During stage 1, the preliminary investigation and research is done for the product. This happens when the new product development process is in its early steps. After this, the market opportunity is assessed along with the probable fit for the product in the company's portfolio. At stage 2, the time-lag between the launching stages can often be small for high-technology products. Stage 2 takes place at the same time as the conceptual testing in new product development. At stage 3, the development and testing continues, and

the product is modified into its final form as commercialization and final launch are approaching. Figure 8 also illustrates that there is active feedback in place between the development stage and the marketing strategy. In the development stage, launch plan and marketing mix features are established. Market acceptance is the goal that the new product development team and managers aim at. To help achieve this, target market selections and positioning of the product should be done in correspondence with the marketing mix activities. (Guiltinan 1999.)

3.5 Assessing the success of product launches

It is vital for companies to be able to repeatedly launch successful new products in order to sustain a competitive spot in the marketplace. This is why it is important to assess the success or a failure of product launches after they have been conducted and the product sales rates in order to see how the product is doing. If a perfect product existed, customers would wildly seek after it. It would also provide massive financial returns to the firm. The product would be technically superior, which would give the firm a performance advantage and guarantee efficient launch. The reality is however that this kind of product does not exist. Companies have certain amount of resources and they have to sacrifice some amount of resources from one dimension to achieve success in another. (Griffin & Page 1996, 479.)

To measure the success or failure of new products, Cooper and Kleinschmidt (1987) have developed various determinants. Product's financial success is the key determinant for measuring success. It can be measured by calculating whether the product exceeded the acceptable profitability level or fell short of it. Payback period is a good tool to determine whether the product is doing well in the market by calculating how many years from the time of the launch it took to get back the early financial costs. Calculations for the domestic and foreign markets can be done three years after the launch. The actual market share can be compared to the intended market share in the domestic market and target countries. Relative sales refer to the sales of the product compared to those of other new product introductions made by the company in the last five years. Relative profits are compared in the same way as relative sales. The sales are also compared with the sales objectives to determine whether they have exceeded the projections or fallen short of them. Measuring opportunity window refers to determining whether the product opened a window of opportunity for the company in a new product category. Opportunity window can also be measured on the market level - it is assessed whether the product opened a window of opportunity in a new market for the company that did the initial market launch. (Cooper & Kleinshcmidt 1987, 177-178.)

Customer loyalty and the amount of new customers can also be calculated to make sure that the company did not lose any of its customers when conducting a product launch. Ideally, new products should also bring the company new customers that share its values and can commit to it in the future, hopefully becoming loyal customers. These are all good tools to measure the actual outcome of the product launch after a certain amount of time has passed.

Multidimensionality of outcomes in the product development process makes measuring and defining the extent of the product launch success very difficult. According to past researches, project success is based on three dimensions that are independent from each other. They are financial, consumer-based and technical, or process-based. These dimensions have to be differentiated, as e.g. reaching success with customers is not equal to financial success, which means that the product provides profit for the company. (Graig and Hart 1993; Hart 1993.)

Examples exist of some cases when simultaneous product success and failure were observed. Ford Taurus was technically a failure, while it still managed to become commercially successful. Technical issues of the car model surfaced three years after it was produced, while the initial quality of the model upon release was very high. The development process was simultaneous, which in this case means that the product and the manufacturing process were designed simultaneously. This improved the development speed but it had unexpected harmful side effects. This kind of concurrent engineering caused highest long-term defect rate in 20 years of Ford's history up until that point. The company's customers, however, were keen on the driving performance and design of the car, which resulted in its commercial success, as the sales were higher than projected. The eventual outcome though was that the customers were disappointed with the high amount of repairs that the car required, and in the long run its resale value was rather low. (Griffin & Page 1996, 480.)

Another example is the "Xerox Mouse". It was a success technically and in terms of customer acceptance, but financially the mouse was a failure. The mouse was invented in Palo Alto Research Corporation laboratories in 1970s. Today a computer mouse is a ubiquitous item found everywhere where a desktop computer is used. However, the modern version that is attached to a computer used worldwide is not a Xerox mouse. Microsoft and Apple, along with some other manufacturers, greatly benefited from the development by Xerox. The ironic part is that Xerox was the only company that did not profit from its own development. Eventually Xerox did not end up launching the mouse, so for them the product was a financial failure, as it did not result in any financial return on the investment.

Kodak's instant picture experience is another example of measuring the product's success. In Kodak's case, the product would have been a success if it had been assessed after two years from the product launch. The product managed to obtain a share of 35% of the

volume of total sales in the whole product category. In the long run, this product can be considered a failure, because Kodak suffered large financial costs incurred by violating Polaroid's patents. (Griffin & Page 1996, 480.) Thus, it becomes evident that timing is another very important determinant of assessing whether a new product was a success, as the results can differ significantly depending on at which stage of the product's life cycle the assessment takes place. When analyzing its product launches, the company should always consider in which area success was being pursued, be it financial success, technical success or success with the customers. The most difficult challenge is to achieve success in all three dimensions, and this is often the ideal outcome that companies try to reach.

4 SUMMARY OF THEORETICAL VIEWPOINTS

Engineering, manufacturing, designing and marketing units of the company need to work in cooperation in the new product development throughout all of the stages of the process. It is important to know that new product development should happen on customer terms, so that market acceptance could happen. This is vital for the success of a new product. Customer participation is very helpful in the process of product ideation and idea screening, as it helps the company to create and launch products that would be appreciated by the potential customers. The input that customers bring into the process is essential for the company launching a product. In the new product development process, the importance of conceptual development and testing cannot be downplayed, as it is at this stage when the ideas start taking shape and eventually become blueprints for future products. Teamwork and cooperation of different company units participating in the development process are once again emphasized.

During business analysis, the financial department provides insights about the costs associated with the development of the product, as well as the profits that the product can be expected to bring. Product development and market testing are the final stages of the new product development process before the actual product launch. At these stages, the product may still be modified and upgraded. Market testing is very important due to the fact that this is where a company makes the final decision in regard to whether the product launch will take place. At this point, when the process is already in its final stages, it can be very difficult to make the decision to abandon the product, even if it is a financially more viable option for the company, as the expected demand is not at a proper level.

Commercialization crowns the new product development process. A key point for the success of the product at this stage is the information acquired from the test market. Other factors include overcoming the psychological pressure connected with deciding to abandon the product. Companies should only launch products that are seen to have high chances of bringing in significant profits. Company management can directly influence most of the activities that lead to product success or product failure. The significance of proper execution of the early stages of the NPD process is evident. Logistics is another key success factor and it should be carefully considered, because interruptions in logistics are seen as a big contributor to the possible launch failure. Timing is also an important factor in the launching phase. Firstly companies need to stick to their promises regarding the launch date - any delays in the launch are bad news for the public and they will undoubtedly create trust issues. Development speed is essential to be at just the right level, because as it was pointed out earlier: shortened time of the new product development process can have a positive effect on the outcome. However, if the development speed is too high, the product success probability might start to decrease, as some vital issues

might end up being ignored or rushed through at the development stage. A lot of the times, though, faster launch will positively impact the product success possibility. Trust plays an enormous role in the success of the product when it enters the market. Customers need to be able to trust the company and believe in the product when making a decision to invest in them psychologically and financially.

The topic of timing, which was covered in subchapter 3.3, presents itself as a crucial factor, which generally affects the product's success after its launch. Company management needs to consider different options in regard to when to enter the market. In some scenarios, the best choice would be to be the "first-mover" and thus gain a competitive edge over the competitors, who may launch similar or compensatory products. In other situations, it may be smarter to follow other companies' lead and learn from other products' failures or successes, also benefiting from the fact that the market potential gets better over time. The appropriate timing strategy should be chosen according to the business plan and based on desired buying behaviors in accordance with the product's degree of innovativeness. When it comes to timing, it is very important to stick to the target schedule when launching a product. Market does not react well to delays in the product launch. This issue will be further investigated in the empirical part of this study.

In the latter part of the theoretical chapter, tactical and strategic decisions were discussed. In product launching, it is necessary to carefully consider them and recognize important themes, as those also play a big part in the process. Tactical decisions refer to marketing and marketing mix decisions, while strategic decisions determine what course the development of the product will take: what the product will be like and what kind of markets it should target, as well as how innovative the product should be. The final thing that should be accomplished in conducting the launch, according to this thesis, is finalizing the marketing plan, which has been worked on throughout the whole process of new product development. This will help the companies to plan its each step and see what kind of things should be taken care of at each stage. The last subchapter discussed the assessment of the product launch success.

This subchapter is especially important for this study, as its empirical part presents an assessment of Windows Vista's product launch and discusses the reasons why it did not go as Microsoft had planned. Every company should assess the outcome of its product launches after enough time has passed since the launch took place. The optimal time to carry out the launch assessment can vary depending on what kind of product was introduced to the market and what features of the launch the company would like to analyze. In case of Microsoft's Windows Vista, its launch took place in 2007, which means that more than enough time has passed for there to be enough reliable data available to pursue a research on this topic.

The following chapter discusses the research process and research methods chosen, as well as presents the reasons behind these choices. It is followed by the most interesting

part of the study - the empirical part, which attempts to answer the research questions related to the failure of Windows Vista launch.

5 METHODOLOGY

The present chapter introduces the detailed research design used for this study. The methods used for data collection and analysis are discussed and justified. The aim is to provide solid justification of the methodological decisions made in regard to how this study has been conducted. At the end of this chapter, trustworthiness of the research is discussed.

5.1 Qualitative study

In this study, the goal is to find out and discuss critical factors in product launching in regard to how they affected the launch of Windows Vista, as well as examine what factors can be found in the empirical data and how these factors match the theoretical part of this study. The empirical data will be collected from the Windows Vista product launch and the information will be analyzed in accordance with the theoretical framework. It is typical for a qualitative research, that the main research question is broken down into other, more specific questions (Eriksson & Kovalainen 2008, 38). In this study, the same method is used, and this is evident by looking at the research questions. One of the sub-questions asks how - this question is there specifically to find qualitative answers. It focuses on cause and effect. (Eriksson & Kovalainen 2008, 39.)

This research is trying to get as good knowledge about critical factors in product launching using the theoretical framework and the data collected about the Windows Vista product launch and development of the product. This is why qualitative analysis is used. A more specific research method used is content analysis of the information found in written articles and studies about the Windows Vista product launch. The goal of qualitative research is to understand the reality in a cultural sense, describing and interpreting it as a social construction. Qualitative research is also an effective method of generating information. Structuring and controlling frameworks, which provide complex explanations of situations, are the main advantages of qualitative research in the field of business. (Eriksson & Kovalainen 2008, 4-5.)

There are many reasons behind the choice of qualitative research for this study. According to Patton (2002, 14) qualitative research attempts to find and collect information with a profound analysis. The study focuses on providing a deeper understanding of critical factors that help to execute product launches more effectively; thus, qualitative research can be considered to be appropriate for this study. Ghauri & Grønhaug (2005, 202) claim that qualitative research is suitable if there is an unstructured problem and prior understandings are modest. For unstructured problems, it is typical that there is more than one correct answer for the question. New product development is not a new phenomenon, and yet, success factors of product launch contributing to the outcome of the launch need

further researching as studies on the subject are limited. Existing theories on new product development and product launch strategy form the basic theoretical framework for completing this study, which aims at determining the key success factors of a product launch.

The outcomes of this study are dependent on the empirical process of analyzing and collecting research data. The subchapters of the theoretical part of the study that concentrate on new product development and product launch strategies provided the basis for this study. If there was no theoretical framework, it would be quite difficult to research the process of creating a successful product and finding the success factors only based on empirical research. This is due to the fact that theoretical framework guides the researcher to concentrate on the analysis and point out the connections with the context and content. (Pettigrew 1990, 272.) Basic theoretical framework is outlined before any empirical work begins, but it is not usable if it is not revised within the empirical research process. (Miles 1994, 591.) The opposite way of doing it according to Carson, Gilmore, Perry & Grounhaug (2001, 11-12), is to leave the theoretical part open to alterations depending on the empirical data findings. The framework forms general knowledge about the process of new product development and the importance of product launch strategy choices. For the purpose of helping to determine product launch success factors, empirical data is used and findings of its analysis are analyzed. However, there is no need for hypotheses testing, as the material does not provide adequate basis for it. The data will be collected using secondary data. This will be explained further in the following subchapter.

Further justification of the use of the qualitative research approach lies in the fact that it uses versatile ways of investigating things and phenomena. There is no one correct way of doing it. The research method is used based on the preferences of the researcher, the phenomenon studied and research objects. There are many different traditions, approaches and data collection and analysis methods to study phenomena and people. (Eskola & Suoranta 1998.) Qualitative research is always more or less a unique totality, which adapts basic rules of conducting a research in a creative way (Alasuutari, 1999, 24). The term “qualitative research” can be a little misleading, and it receives a lot of criticism. The term might give an impression of a better and softer approach, compared to the superficial and quantifiable quantitative research method. The arguments of the critics of qualitative research have to do with the fact that in reality the research approaches the truth on the surface and the absolute truth is impossible to reach. This also is an assumption that critical realism stands for. (Töttö 2004, 20.) In this research, it has to be accepted that knowledge is never entirely true, but it approaches the truth, and interpretations need to be made through the researcher’s own perspective. In qualitative research, information can be obtained and deeper understanding achieved about the phenomenon and the reasons, nature and causalities behind it. (Niiniluoto 1999, 10-13.)

5.2 Case study

Case study approach is adopted in this research. Case study can be considered as more of a strategy for doing this research instead of it being a research method. For case studies, it is typical to investigate a certain phenomenon, and data is collected over a period of time within the context that is related to this event or phenomenon. (Hartley 2004, 232.) According to Yin (2003, 9) case study is a valid strategy to use in situations when one is attempting to answer questions like how or why. The results that are obtained from case studies do not often provide answers that can be generalized, because a case study is always linked to a specific phenomenon. On the other hand, theoretical contributions can be made by using case studies, as they give insight into new theories and perspectives due to the fact that they are connected to specific settings. (Eisenhardt 1989, 546.) In this research, the case is Windows Vista's product launch, as there is enough information available considering the product launch, the development of the product and customer reaction. To assess the case for this study, it needs to somehow relate to critical factors in product launching, which have been discussed in the theoretical part. Thus, the results from analyzing case studies should give insight into the theory, support the framework and provide a deeper understanding of the phenomenon. Accessibility and study resources also have impact on the selection of the case. (Rowley 2002, 19.)

Microsoft's Windows Vista product launch was chosen as a case for this study because it provides a good understanding of struggles and problems that companies can face in product development and product launching. The idea of this specific setting came from researcher's supervisor in a meeting on November 2016. First the idea was to study product launches in overall, but because of limitation of master's thesis project it was easier to limit this study to a single product launch.

Windows vista was first planned to be launched in 2005 with high expectations from customers. Although it got delayed couple of times because of reasons in the final product that needed to be considered again and upgraded. Microsoft had high hopes regarding their new product. Windows Vista was finally launched in January 2007 and Microsoft stopped selling it in October 2011 and its support ended in April 2017, which meant that Vista had come to its lifecycle's end. (Microsoft 2017.) Windows Vistas sales rate after one month of the launch was 20 million copies. If we compare that to Vista's follower from Microsoft, which is Windows 7, its sales rates after one month of the release was over 100 million copies. (McCracken, 2013)

The launching and development of Windows Vista is of interest here, and the chapter "Findings" will tell us what kind of issues were found in the launching and development phase of Windows Vista. This is how we try to understand the reasons for poor customer reaction towards vista and the reasons that lead to the several delays of Windows Vista operating system.

5.3 Content analysis

Content analysis is the method used to analyze data in this study. Qualitative content analysis is a method for analyzing verbal, written or visual communication messages. It can be used, for instance, to analyze newspaper and magazine articles. The idea is to describe and to measure a phenomenon, which in this context is the launch of Windows Vista. Moreover, it is a method to analyze documents. Content analysis can be used to test the theory by using the content of articles and documents. It can provide new insights, knowledge or representations of facts and be a guide from practice to action. The goal of the content analysis is to get a wide and summarized description of the specific phenomenon. The content of documents can be categorized using theoretical implications discussed in the theoretical part. In this context, these categories are critical factors in product launching. There is no systematic way of analyzing data; moreover, the idea is to classify the words from the documents into smaller content categories. (Elo & Kyngäs 2008.) When using content analysis as a research method, a following operationalization table (Table 1.) was created to help answer the research question.

Table 1: Operationalization table

Research Question	Sub-questions	Theoretical Framework	Themes/ Analyses
How windows Vista product launch can be explained with critical factors in product launching?	What are main critical factors in product launching?	Commercialization process and new product development theory	• Product testing • Market demand • Planning • Trust • Timing • Development speed • Easiness to use • Development
	How critical factors impact on product launches?	Product launch strategy	• Customer Involvement • Customer loyalty and trust towards product • Customers relationship
	How to make product launches more successful?	Activities related to product launch success	• Improved testing • Involving customers • Marketing • Avoiding delays in launch • Contact intensity

Interviews were not used because of the timetable of this research and for the reason of it being extremely challenging to find reliable interviewees from the Windows Vista developer unit, who could answer questions about an event that occurred in 2007. Also, the quality of the answers might have been questionable, as it is hard to predict how honest those involved in the development of this operating system would be about the product and its failure.

5.4 Data collection

When it comes to secondary data, it is a standard practice to use pre-existing data derived from studies by other researchers and other contexts. In qualitative research, data is usually collected from field notes, tapes and transcripts of interviews, observational records or focus groups. Secondary data is often focused on non-naturalistic and naturalistic data.

The original data, e.g. in news articles or surveys, is collected for purposes other than the purpose of the researcher who uses this data. The research then also tries to find answers to different questions than those explored in the original, or primary, study. The collected secondary data can be used in the context of proving, disproving or refining the findings of original studies through the data re-analysis. (Heaton 2011.)

In this study, the aim is to analyze the documents, mainly news articles and research studies, related to the launch of Windows Vista. When conducting research, it is important to explain why a specific data collection method is used. Berg (2004, 267-268) has used a term "criteria of selection", which refers to the nature of what data is used in content analysis. Chapters 2 and 3 provide the theoretical framework for understanding the critical factors in product launching, which are likely to have an effect on the launch outcome and the product's success. The content of documents collected for this study presented information about the factors of product launch, which have been discussed in the theoretical part. This is the *criteria of selection* for this study. Specific themes are the main reason for why certain documents were used and others ignored. The data needs to be public in order to be able to successfully collect it. The data is qualitative and consists of information about Windows Vista before and after the product launch in written form. There are two ways of collecting data for content analysis: manual way and programmed way (Laaksonen & Martikainen 2013, 204). Here, the data is collected and analyzed manually.

As already mentioned, secondary data is normally produced for purpose other than the study in question. This can mean that the information may be false, distorted or subjective, which is also the case with interviews. There can also be alterations in the choice of information. It is the responsibility of the researcher to make the data relevant for the study, and the researcher needs to be aware that not all sources are reliable for the research purpose. (Ghauri & Grønhaug 2005, 91-92.)

There are some challenges in the use of secondary data in this study. The data needs to contain information about the critical factors in product launching. These can be found in articles and studies about Windows Vista. These documents are not generated for the purpose of this study, but they can provide relevant and specific information that can be used in the study by way of conducting content analysis. The nature of articles and research papers is connected with certain limitations that have to be considered. News articles can be provocative in nature that is why information for this study was collected from 50 different documents, which contain similar themes and provide facts that support each other. It should also be pointed out that due to the nature of the documents, the information they provide is not generated in controlled environments.

Moreover, the features of the documents used for the study need to be taken into account. The search of relevant materials was conducted using the "ProQuest" database and Business Source Complete (EBSCO) databases. The search queries used were "Windows

Vista AND Product Launch" and "Windows Vista AND Product Development". The search produced over 7000 articles and academic journals, which had to be narrowed down on the basis of the source relevance. When enough searches was done, it turned out that most relevant documents were written between 2006 and 2012, so the search was narrowed down to these years. This gives enough information before the launch date and also after the launch. Documents that appeared after launch are valuable, because in these documents there is information about how the launch when and how Vista has succeeded.

Eventually, fifty articles were studied, from which twenty documents were selected for further analysis. Those are listed in the table below. They include nine news articles and seven journal articles, while the rest consist of blog posts and one document that can be classified as a product review, which was written after enough time has passed from the launch. The themes can be found in the Main Findings section, and they also present the critical factors in product launching that have been covered in the theoretical part. They are then analyzed to determine why and in what ways they contributed to the negative outcome of the Windows Vista launch. The data is collected during March and April 2017. The following table will present the documents used and their main points regarding this study.

Table 2: Documents used in the study

Source/ code number	Author	Topic	Theoretical concepts	Research method	Main findings	Date
1.	Bright, Peter (technology lab)	How Microsoft dragged its development practices into the 21st century	Timing, development	News Article	Late launch of Windows vista	8.6.2014
2.	WARC	Microsoft Again Delays Windows Vista Launch	Timing, delaying	News article	Press release about delaying the Vista launch	23.11.2006
3.	Snyder, Beth/ Advertising age	$500M FOR VISTA?	Trust, Development, engagement	Journal article	Aggressive launch, high expectations, complex product, gigantic launch, bad reaction in customers	29.1.2007
4.	NBC news	Microsoft delays wide launch of Vista	Timing, Trust, testing, development	News article	Article about delay in launch. The stores did not have product for the customers the time promised	22.3.2006
5.	Waters Richard, Financial Times	Microsoft unwraps a dinosaur it hopes has a powerful bite The long-delayed Windows Vista operating system is set to start a highly profitable software renewal cycle.	Trust, Commitment, development, market demand	News article	Companies have to change their IT systems to use Vista. This created difficulties to commit and adapt. The expectations were too high.	30.11.2006
6.	Reuters News Agency	Vista delay hurts stock	Trust, Timing, market demand, development	News article	Windows plans to delay the launch of Windows Vista, due to system improvements.	22.11.2006
7.	Aaron Weiss/ technology writer	Who need windows vista?	Trust, Expectation, Features, market demand	Journal Article	Market manipulation, delay of launch, unrealistic expectations, big amount of changes, distrust	Dec.2006
8.	Dow Jones & Company Inc.	Tests of Windows Vista Debut	Product development/Testing	Wall Street Journal article	Delay of launch because of product testing, trust in customers	24.5.2006
9.	Christian Bird, Nachiappan Nagappan, Prekumar Devanbu, Harald Gall, Brendan Murphy	Does Distributed Development Affect Software Quality? An Empirical Case	Development, Development Units, Communication, trust	Research Paper, An Empirical case	Development of Vista was too divided between the different international development teams. Problems at communication and co-operation.	May 2009

Source/ Code number	Author	Topic	Theoretical concepts	Research method	Main findings	Date
10.	Mary Weir, Sharon Gaudin, Larry Greenemeier, Nicholas Hoover/ Information Week	100 Things you must know about Microsoft's most important product launch	Development, product features, trust product testing, development speed, adapting	Journal Arcticle	Users will have to upgrade their pc's because of the complexity of Vista. User may experience some features intrusive. Development has taken too long, customers do not fully believe on it.	27.11.2006
11.	Brent Goodfellow, CPA Technology Advisor	Vista: Ready to Launch, But Which Version?	Product features, complexity of product, expectation	News article	Confusing with Vista's multiple choices of the product.	Jan-Mar 2007
12.	Jefferson Graham/ Usa Today	Vista struggles to bust out as business customers snub it	Product development, product features, launch, tactical and strategic launch decisions	News article	Vista had not sold as expected, corporate users did not see the value on it. Vista is slow and needs very high requirements from a computer. Price is high, bad feedback from users.	1.5.2008
13.	Steve Lohr, John Markoff/ NY Times	Windos is so slow but why?; Sheer Size is causing delays for Microsoft	Development speed, trust, strategy, expectation, level on innovation, timing, market demand	News article	Delay of vista has effected trust among customers negatively. Development has taken long because of Vistas big size of code base. Vista is not innovative enough. Microsoft needed to develop Vista further to have it for launch.	27.3.2006
14.	Rob Laurimer/ The Colorado Springs Business Journal	Will Windows Vista operating system software be bigger, better, more?	Timing, engagement	Journal Arcticle	Launch had been delayed and people had high expectations towards it.	31.3.2006
15.	PR Newswire; New York	Microsoft launches Windows Vista and Microsoft Office 2007 to Consumers Worldwide	Expectation, trust	News article	Customers had high expectations before the launch because it had been delayed so many times. Microsoft's representator had loaded these expectations just before the launch	29.1.2007

Source/ Code number	Author	Topic	Theoretical concepts	Research method	Main findings	Date
16.	Nick Wingfield/ Wall Street Journal	Tech Journal: To rebuild Windows, Microsoft razed wall - Three year effort to create latest version meant close collaboration among workers to avoid Vista's woes	Product Development, Communication and collaboration, development speed	Journal Arcticle	Vista took too long to make, users weren not able to use all Vista's features because of the complexity and compatibility with third party hardware. Different development teams did not share their plans for each other.	20.10.2009
17.	pcmech.com	Is Windows Vista really a failure?	Product development and product features, trust	Blog post	The initial launch did not go as planned. Apple had demonized Vista. There was not suppose to be a vista in the first place and it was also too slow. Vista failed to impress.	7.10.2008
18.	Peter Galli/ eweek.com	Is Microsoft Window Vista culpable?	Market demand, marketing, launch planning	Blog post	Microsoft did poor marketing of Vista. Due to Vista was not released on time, customer bought hardware with Windows XP with a coupon to upgrade to Vista, but these pc:s were not able to run Vista properly	10.8.2007
19.	Paul Thurrott/ winsupersite.com	Windows Vista February 2006 CTP Review, part 5: Where Vista Fails	Trust, expectation, timing	Product review	Microsoft created high promises and expectations to customers before the launch, the continuous delaying effected trust in customers. Customers had high hopes after superior Windows XP, but the technical performance disappointed customers.	6.10.2010
20.	Dr. Roy Schestowitz/ techrights.org	Time Calls Windows Vista the "Biggest Tech Failure of the Last Decade"	Product development, timing, development speed	Blog post	Microsoft said after 2008 that Vista was a mistake, because it was not developed as good as it should have and delaying of the launch had effect among customers.	20.5.2009

5.5 Analyses of data

Content analysis can be applied to nearly all sorts of written data used in a qualitative research. In this study, the first step of the data analysis was familiarization with the data - the documents were read through several times to make the content clearer. According to Miles and Huberman (1994), data found in various sources, which here include articles and studies, can be analyzed in three steps: simplifying, categorizing and forming theoretical concepts. If there is a great amount of material present, it can be analyzed by coding the words or categories found in the text. (Schreier 2012, 115.) In this study, the material was analyzed without use of coding, as the idea was to look for content that is related to success factors. The articles and studies used as research material are analyzed, and words and sentences used during the search for the material are examined in relation to how they might have affected the outcome of the Windows Vista product launch. Words and sentences are thus chosen for the analysis units.

According to Moring (1999), these words and sentences can be formed into different themes that contain essential information on findings. After certain themes were found in the materials, they were compared to the theoretical framework, and every article was categorized according to these themes and the possible critical factors mentioned. After the data was analyzed, these findings formed an entirety related to the reasons for why the product launch did not succeed, and these critical factors are analyzed using the theoretical framework. This is presented in the Findings chapter. The idea was also to compare the findings obtained from the data analysis to the key points of the theoretical part. At the end of the study, it will be discussed whether the critical factors identified using the data analysis were similar to those attributed to the product success in the theoretical part. The ultimate goal is to answer whether the failure of Windows Vista can be explained through assessing the critical factors identified by analyzing materials used in this research. Thus, it is valid to propose the following question: do findings of the secondary data analysis correspond to those discussed in the theoretical framework?

5.6 Trustworthiness of research

When trustworthiness of the study is assessed in a qualitative research the purpose, subject, data collection, analysis, duration, and reporting of the study are reviewed. In addition to that, the relationship between the researcher and research subject and research questions is analyzed. (Tuomi & Sarajärvi 2011, 140-141.) The emphasis can be placed at three different factors, when trustworthiness is assessed. First is credibility, which means that results are not manipulated. Second is transferability of results. This is partially possible even though the results cannot be generalized. Third is confirmability,

which means that other studies would produce results similar to those of the study in question. (Eskola & Suoranta 1999)

The purpose of this study was to understand Windows Vista product launch using theoretical framework and analyzing the launch with help of critical factors in product launching. The empirical data was limited to twenty documents, so it can be assumed that more trustworthy results could have been obtained if the amount of analyzed material was higher. The scope of a Master's thesis is however rather limited, so the amount of material used in this study can be considered sufficient for the purposes of this research. The saturation point, which refers to the moment a researcher might arrive at when no further reading and data sampling can produce any more useful information (Jokinen 2008, 245). This point was reached, and it was clearly observed during the process of data analysis. The same kind of themes came up in different sources. Content analysis was used, because the materials analyzed consisted of written documents, and through this, themes of interest were uncovered within the collected data. Results of a qualitative research cannot be generalized, but this is not a valid reason to doubt the trustworthiness of a qualitative research. This can, however, be the case in a quantitative study, where the researched phenomenon is usually represented by small sample sizes and single cases. (Alasuutari 2011, 234–235.)

When this research was started, it was clear that the researcher would conduct the study independently. The researcher does not have any kind of relation to Microsoft, nor has he ever been involved in any of its product launches. To argue the trustworthiness of the research results even further, it should be mentioned that the researcher did not conduct the study on behalf of any organization. Thus, there was no breach of ethical norms, as no intention to manipulate the results was present. The empirical data sources can be found publicly on Internet, and the references have been marked in the bibliography section, which provides everyone a possibility to read and review the materials that have been used in this study.

Another argument in favor of claiming trustworthiness of this research is the researcher's recognition of himself as a central research tool for this study. (Eskola & Suoranta 1999, 211–212.) Possessing prior knowledge and experience of doing academic studies at the Turku School of Economics, the researcher can state that he acted as a research tool in this study. The report as a whole is a subject for assessment of trustworthiness and it should be as simple and detailed as possible, so that the reader could understand the conclusions that the researcher has arrived at. (Tuomi & Sarajärvi 2011, 141.)

6 FINDINGS

In this chapter the findings of research are presented. Based on the analyses of the material, following main themes which affected the outcome of Windows Vista launch were found. The operationalization table was also used for analyzing the empiric data.

6.1 Timing

In the process of analyzing the data, timing turned out to be one of the main recurring themes. In fact, the impact of timing was mentioned in almost all of the materials analyzed for this study. For instance, first document mentions that "Windows was very late and only came out after the original software was scrapped". Most documents also talk about a "delay of launch" or "delay of product" in one way or another. These were the documents that were published before and after the actual launch, which took place on January 30, 2007 for consumers and business customers. The news about the delay in the product launch caused disbelief and anxiety among the customers, who had already waited too long for the product. In data was found that because the launch of Windows Vista was already delayed several times, another postponement of consumer release until after the Christmas holiday season was not taken well by the customers. The document 4 features the following statement: "It's not the optimal situation, to be launching the next-generation version of Windows right after the big holiday sales season," said analyst Joe Wilcox with Jupiter Research". According to document 5, the delays also had a negative impact on the corporate customers, who had been waiting for the new operating system for 2 years already. Vista was first planned to be published in 2005, then 2006. In 2005 it was reported that Vista comes in the latter half of 2006, and thus it became a moving target for customers. Lastly they were expecting the product to be released by Thanksgiving in November 2006, which never happened.

In data was a good example of demonstrating how much of a negative impact the delay of Vista had on customers. According to Lohr and Markoff (2016) the customers disappointed by the delays in Windows Vista release started to pay more attention to Apple's new Macintosh operating system. Microsoft could have improved the outcome of the launch, had they been able to execute it during the Thanksgiving weekend in 2006, as it was also announced by Microsoft's marketing officers. One of the key statements from Lohr and Markoff's article is this: "Last week, in the latest setback, Microsoft conceded that Vista would not be ready for consumers until January, missing the holiday sales season, to the chagrin of personal computer makers and electronics retailers -- and those computer users eager to move up from Windows XP, a five-year-old product." This kind of press release is very delicate and it delivers a clear message to the customers. It is also

important to mention that the article was written in late March 2006. Document 20 contained information related to Microsoft itself admitting in 2009 that Windows Vista was a mistake and the wrong timing and continuous delays of the launch had negative effects on all potential target customers worldwide. The theoretical part also mentioned timing as a factor that plays a critical role in the product launch, insisting that it should be paid careful attention to throughout the whole product launch development process, as well as in the strategic part of the launch.

6.2 Development speed

According to Figure 5, product development speed can have a negative effect on the outcome of the product launch, if it is too low and the development of a product takes too long. Development speed also directly affects the product launch timing, which can be mentioned already at this point after analyzing the data. Development speed was an important factor in Windows Vista failure, as Microsoft was not able to develop the product on time and their plans for an early launch were too ambitious. They also made the mistake of publicly announcing the launch date, which was then postponed several times. The development speed matter was discussed in 11 documents. Microsoft was not able to release the product on schedule, because they ended up requiring more time to develop the product - the company failed to have it ready in time for the announced date. One of the key issues regarding development speed was mentioned in document 10, which clearly stated that the development took way too long and it resulted in trust issues, which will be discussed further in the following subchapters. More data examined the possible reasons behind the increase in Vista's development time.

Ultimately, it could have been caused by the operating system's very large code base and security issues. Vista's earlier versions did not meet the requirements in terms of security that it should have, forcing the developers to continue working on the product to improve its privacy and security features. Vista's development was held up because the project had to be completely restarted in the summer of 2004. Similar kind of themes regarding the development speed were found in all of the analyzed documents, that is why it can be seen as a key factor that can greatly influence the outcome of a product launch. An attempt to find documents that would contain a positive assessment of Windows Vista's development speed did not produce any results.

According to the analyzed sources, the development of Vista took over five years and this was a strong reason for why the customers started to lose interest in this product. One more reason why Windows Vista's development took as long as it did was addressed in source No.13, which claimed that due to the fact that the development of the operating system was divided between different global teams who did not communicate enough,

most of the development teams were not fully aware of all of the details of the development process. This topic was also covered in an article by Nick Wingfield in the Wall Street Journal (source No.16).

6.3 Development, communication and testing

Product development and product testing turned out to be some of the challenges encountered during the launch of Windows Vista. They were mentioned in nine documents. The specific problems were related mostly to product testing. It was claimed that problems with the security of the operating system caused customers' reluctance to buy the product. These technical issues were the reasons for slowing down the development of the product. The results of the product testing among beta users turned out to be quite poor, as the testers were not very enthusiastic about the product they were using. Document three stated that the reviews from the beta testers were not good.

The interface of the product was one of the things that did not receive much positive feedback from the customers. Couple of documents asserted that the development of the Windows Vista turned out to be a big problem - this was the main theme of these documents. The importance of product development and product testing and achieving good results in those phases was discussed in subchapter 2.4. The following actions turned out to be problematic for Microsoft's development units.

- Loss of communication richness
- Coordination breakdowns
- Geographic dispersion
- Cultural differences and barriers

Document 16 specifically states: "A key problem was that the Windows team had evolved into a rigid set of silos -- each responsible for specific technical features -- that didn't share their plans widely. The programming code each created might work fine on its own, but caused technical problems when integrated with code created by others". This is a good example of how important communication is in the product development process, when a new product is being created. Other sources also support this by adding that communication between Microsoft's development teams was one of the reasons why the development of Windows Vista took so long. This also caused problems for final users, as the operating system was difficult to use with third party software and hardware such as printers and scanners, as well as corporations' ERP systems, etc.

6.4 Trust and customer engagement

All of the factors discussed previously caused suspicion and incredulity among customers. Subchapter 3.1 titled “Role of trust” discussed the importance of having trust and encouraging engagement with the customers in order for the product launch to produce better results. Source No.3 claimed that Microsoft was expecting a “wow-reaction” from the customers when the operating system came out. After analyzing the documents that contained similar themes, it can be assumed that Microsoft’s press releases and marketing made the company look arrogant towards their target audience. One of the news articles also mentioned that prior to the launch Microsoft was sure that once introduced to the market, the product would metaphorically “walk out of the stores”.

Numerous delays and continuous postponement of the launch, as well as mediocre results of the product testing, caused customers to lose their trust. It was found that Microsoft invested USD 200 Million to market and promote Vista’s predecessor Microsoft Windows XP in 2005, due to the delay in Vista’s launch. According to the analyzed data, customers did not feel in any way invested in Windows Vista.

Another setback for Microsoft was information that corporations would not tie their software purchase cycles with Microsoft’s product life cycles. This was a major setback for Microsoft, since they expected solid results from business to business sales. It cannot be emphasized enough that delay of the launch date was one of the major reasons why customers lost trust towards Windows Vista. This theme was brought up in all of the documents analyzed for this study. To provide further insight and examples, Microsoft created high expectations and gave bold promises to its customers, and with the success of Windows XP having raised the bar very high, they were really expecting Vista to be a superior product, which it did not end up being. Beta testing results, multiple delays, and technical problems, which were especially disappointing to the customers, made them even more lose trust in the product.

6.5 Product features, marketing, demand and planning

These themes were mentioned in eight of the documents. In subchapter titled “Product development process”, the importance of product development, market demand and planning were discussed. The product should be easy for the customers to use and understand. It turned out that Windows Vista was a very complex product, with a lot of alterations to its previous version, Windows XP. Customers did not find it easy to use and corporations had to change a lot of things in their IT department to be able to use the new operating system. In addition to that, Vista had a lot of problems associated with bundling with third party software.

The importance of understanding the market and customer needs was covered in the previous chapters. Microsoft had some problems with understanding the real needs of its customers, according to the collected data. For instance, document seven stated the following: "Vista is not able to meet customer needs." Inability to meet customer expectations and address their needs led to them not feeling in any way engaged with the product.

According to the theoretical framework of this study, marketing planning and planning of the launch should be done extremely carefully. Microsoft's marketing and development clearly struggled with it. An excerpt from source No.7 reads: "Vista was first planned to be published 2005, then 2006, in 2005 was reported that Vista comes in the latter half of 2006 and it became a moving target, too complex of a product, and interface did not please customers." Microsoft had overly ambitious expectations predicting that Windows Vista would instantly become a great success story.

Source No.5 claimed that Vista's complexity created difficulties for companies, since upon adopting the new operating system they had to change many solutions in their IT systems, which led to difficulties in committing to the new OS and adapting it to corporation's workplaces. To make matters worse, Windows Vista's slowness made the corporations even more reluctant towards using it. Corporate users did not see value in Windows Vista due to its complexity and very high requirements of the computers, on which it was meant to operate. Aaron Weiss (2016) wrote about Microsoft's market manipulation in a sense that consumers had criticized the company for being guilty of manipulating and abusing its power in the PC markets. More data suggested that poor marketing ahead of the Vista's launch was not able to attract any positive attention and get the customers excited about the product.

The complexity of Windows Vista was explained in the analyzed sources in the following way: the operating system had too many different choices available for customers, so it was challenging to choose, which version customers were supposed to purchase. It also turned out that there was no actual demand for Windows Vista, as in reality the customers were expecting something completely different to follow Windows XP. Several sources mentioned that in customers' minds, Apple's operating system began to seem more interesting, as the company was executing a very effective marketing strategy and had solid vision in their launch planning. This topic is, however, so broad that it would need its own research and cannot be covered within the limited scope of this study. Nevertheless, it can still be mentioned that Apple began quickly gaining market shares during and after Windows Vista's launch. This issue is related to business planning and the degree of Windows Vista's innovativeness. Both these topics have been covered in the theoretical framework.

6.6 Other findings

There were also additional emerging things from the analysis. Firstly, themes related to tactical and strategic questions in launching were also covered in the analyzed sources, although they did not use these specific terms. Multiple sources mentioned that Vista should have been more innovative for the market where it was launched. Microsoft was not fully aware of its competitors' stance either. Several documents stated that Apple's competitive stance benefited from the launch of Microsoft's new operating system.

Another challenge that Microsoft faced was pricing. The topic of pricing was also covered in several of the sources. For instance, one document claimed that customers wished that there would have been more low-cost alternatives for Windows Vista. Third emerging finding was advertising. Many of the documents talked about it, saying that Microsoft's marketing was taken too far, and the company was convincing the customers of Vista's superiority and predicting that it would be sold out within the first weeks after the launch.

In the second chapter titled "New product development Process", the importance of careful development of the product was emphasized and different stages of the process were explained and elaborated upon. The analyzed sources did not provide enough data on the processes of idea generation and idea screening during the development of Windows Vista. The product's business analysis could have perhaps been better, based on the findings from the analyzed sources; and it can also be said that Microsoft's expectations towards Windows Vista were way too high, as stellar results of the launch were predicted. Overall, Microsoft should have adopted a more realistic approach when developing the business plan for the new operating system.

Lastly test marketing of Windows Vista was executed, but the general consensus in the sources was that the results from the test markets were quite poor, which did not help Microsoft in promoting Vista's sales or making the product attract more interest and evoke customer enthusiasm.

7 DISCUSSION AND CONCLUSIONS

The main reasons behind the Windows Vista's product launch failure discussed in previous chapter are the main outcome of this research. Timing of the launch was not optimal, as the final launch was done on January 30, 2007, right after the global holiday season. For a product like this, launching after a long worldwide holiday season like Christmas and New Year's is definitely not the best idea, especially when customers had been waiting for the product for a very long time and expected it to hit the stores in time for the holidays. The launch of Windows Vista was postponed several times, and these delays received global news coverage. Originally, Windows Vista was planned to be released in 2005, but the launch date was then moved to 2006. The final date was said to be during Thanksgiving in November of 2006. When that time came, the launch was delayed yet again. This caused trust issues among consumer customers and corporate customers, especially because problems that Microsoft had with the new operating system were related to security and privacy.

It can be said that Microsoft had exceedingly high expectations and an aggressive marketing campaign. The development of the product took too long because of the technical and security issues that were discovered during the test marketing phase. As it was already mentioned in the theoretical part, trust is a crucial factor. Loyal and trusting customers are more likely to commit to the product that is being launched. Microsoft's customers had doubts and anxiety towards the new product, which were created by the many delays of the launch date. The operating system did not receive positive reactions and reviews during product testing. Customers were not satisfied with the interface and the complexity of the product, as Vista had too many versions to choose from, which were too expensive from the customers' point of view. When it comes to corporate users, companies needed to make changes in their IT-network systems in order to use Windows Vista. There were also problems with bundling the operating system with third party users, which was a big issue for corporate users due to the fact that companies usually have a lot of different hardware and software connected to their internal IT-network. It was also discovered that Microsoft's marketing department was not fully aware of the market demand. It would have been really interesting to conduct interviews with Vista's developers and find out whether they had at any point during the last part of the new product development process before the commercialization phase considered to abandon the product.

Development units across Microsoft's global development centers were much divided - there were problems in the communication flow, which ended up causing an unwanted situation, where different teams were not aware of what was happening in other development units. Windows Vista can be regarded as a product improvement, so Microsoft should have considered the desired buying behavior from customers to be migration from

the old version of the operating system to Vista, and should have placed emphasis on replacement demand, as presented in Figure 7.

Based on this study, critical factors, which were found during the analysis of the empirical data, were the main reasons why the product launch of Windows Vista failed. With these, the research question can also be answered. Logistics was also one of the critical factors of product launch, according to the theoretical framework. The role of logistics, however, was not discussed in any of the sources, analyzed in the empirical part, so based on this study, it cannot be included into the list of critical factors in product launching. In response to the research sub question, namely "What are the main critical factors in product launching?

" Based on this study and empirical findings, they include the following:

- Product testing
- Market demand
- Planning
- Trust
- Timing
- Development speed
- Product features
- Development
- Marketing planning
- Communication

All of these should be in the developers' mind throughout the entirety of the new product development process, and each of these issues has to be paid a lot of attention to. In the theoretical part of the study, tactical and strategic decisions and business planning were emphasized. These topics were also covered in the empirical part, but there was not enough data on them and their contribution to Windows Vista's launch, as well as no information on how these were addressed during Vista's development process, so in the end they are considered to play a minor role in the outcome of a product launch.

Second sub question was "How critical factors impact product launches?" The answer to that is that they have an impact on customer involvement, customer loyalty and trust towards the product, and customer relationship. These factors also help companies make the development process more efficient by helping them pay attention to the critical issues when they develop the product and select the market, where it will be launched, as well as plan the launch itself. All of them have an impact on the actual sales rate of the product.

The final question was "How to make product launches more successful?" The answer is that in order to have a successful launch, all of the critical factors should be carefully considered. Based on this research, companies can achieve success by improving development and testing, involving customers, improving marketing strategies and making

marketing more honest, avoiding delays of the launch and paying more attention to the timing.

This study was done by analyzing news articles, journals and blog posts written about Windows Vista's product launch, and these results and findings cannot be generalized and directly applied to all products and companies. Companies should, however, learn from this research and understand the reasons for Windows Vista's failure in relation to these critical factors, which are also described and elaborated upon in the theory part of this study and recognized in academic literature. This thesis provides a good perspective on what can happen if these factors are not considered, or not considered carefully enough, when launching a product.

In this research, the idea was to discover the critical factors in product launching based on the theory about new product development process and critical factors of product launch. Theoretical framework provides a good foundation for the empirical part. It is important to understand what kind of things are done in the new product development process, so that critical factors can be better understood. Theory was then applied to a real example from global business field with the goal to understand the failure of Windows Vista's product launch by investigating the empirical data and trying to discover the critical factors that may have affected the outcome of Vista's product launch. The aim was to understand product launch as a whole, as well as the importance of these critical factors in product launching.

In chapter "Research process", methodological choices in regard to how the research was done are explained and justified. The present chapter titled "Main findings" presents the main results that were obtained in order to help answer the research question. The final chapter titled "Conclusions and summary" crowns the research by explaining the results of this study. Companies can use this research to help their product launches by paying attention to the critical factors discovered. The research on Windows Vista's product launch provides examples on how these factors can affect the launch outcome.

This thesis has also encouraged relevant ideas for future research. It would be interesting to make a study about Apple's brand and what they were doing in their marketing and development units during the same time when Vista was launched, as that was the time when Apple began to gain market shares in the computer markets with their Macintosh operating system. After Vista, Microsoft launched Windows 7, which is currently used by different corporate users in many companies and organizations across the globe, including Turku School of Economics, where this thesis was written on a computer that operates Windows 7. A whole new study is required in order to find out what Microsoft did after the Vista's launch, how they came to accept it to be a failure and how they arrived at the launch of Windows 7, which ultimately gained much more success.

The theoretical framework of this study and new product development process could perhaps become a foundation for a same kind of study. Another interesting suggestion for

future research is to study Apple's product launch events, which are talked about all over the world and regarded to be very successful. If you type "product launches" on Google, the top results are often related to Apple's product launches and advice on how to launch products like Apple. The writer wishes luck to everyone and encourages students or companies to study product launches, as it is not only an interesting subject to research, but it is essential for companies that strive to grow and improve their competitive stance, as those companies that cannot provide innovative solutions for their customers are in danger of stagnation and losing their market positions.

8 SUMMARY

This thesis examined product launch of Windows Vista, which occurred in 2007. The aim of this study was to understand why Windows Vista did not meet the high expectations that Microsoft, public and media had towards the operating system. The failure of Windows Vista is studied and explained with help of critical factors that have an effect for the outcome of product launches. Topic of product launch planning has been substantially under-researched and this study provides academic information what can happen when critical factors are not paid enough attention to in product development phase and in launch planning. The research question was "*How Windows Vista product launch can be explained with help of critical factors in product launching?"*

Carefully executed new product development is important for companies that look forward to launch competitive products that could have success on global markets. After a product has been developed, the launch needs to be planned and executed well with a proper product launch strategy. Critical factors were sought from these topics and with these emerging factors the failure of Windows Vista is analyzed.

After having invested approximately USD 500million in the marketing of the new operating system alone, Microsoft predicted that 50% of their users would switch to this version within two years from the launch. However, 18 months after the launch, only 8.8% of corporate users worldwide were running Vista. Microsoft also accepted couple of years later after the product launch that Windows Vista was a mistake. In the first place there was not even a plan to develop this product and it would perhaps been better not to launch Windows Vista. Eventually the support for Windows Vista was stopped in the spring of 2017 and by this the whole Windows Vista project was abandoned. The research of Windows Vista launch has been done with a qualitative content analysis by analyzing secondary data from online documents about Windows Vista product launch and product development. Thus the research is by nature also a case study.

According to the main findings of this study the operating system was not tested carefully enough and the final edition had many performance and compatibility issues. Corporate users should have had to perform many changes in their IT-networks, because Windows Vista had compatibility problems in bundling with third party software and hardware that many of corporations were already using. It also turned out that the timing of the launch was far from optimal. Development speed turned out be a problem for Vista, since the launch date was postponed few times and the product needed to be developed much longer than was planned. Originally Microsoft announced that Vista would be launched in 2005. After this the launch was announced to be in 2006 and it was publicly cancelled.

Vista's development units had communication problems and development of the product was divided globally to too many locations. Microsoft also encountered trust issues

among their customers because of continuous delays and poor results from beta testing. Customers were not engaged enough for the product and product features did not please the public. Vista's aggressive marketing and lack of innovativeness also caused more problems for Microsoft. Lastly the product did not meet the market demand, since customers were not really looking forward for this kind of a software. This also led to the fact that Microsoft's business planning and expected sales calculations were not realistic enough. These findings form the answer for the research question of this study.

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