Innovative companies!

Innovation, Marketing and strategy
– A case study on four companies

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Authors: Mathias Malmgren
Yanyan Liu
## List of Abbreviation

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Name</th>
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<tbody>
<tr>
<td>CTL</td>
<td>Cut to Length</td>
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<tr>
<td>GoTa</td>
<td>Global open Trunking architecture (A world leading new generation CDMA based digital trunking technology. The system has considerable benefits including wireless resource sharing technology and instantaneous connection to other users, preventing newly added trunking services having a negative impact on the traditional communication services and network resources.)</td>
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<tr>
<td>LCD</td>
<td>Liquid Crystal Technique</td>
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<tr>
<td>CNY</td>
<td>Chinese Yuan (Chinese Currency)</td>
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<tr>
<td>IPR</td>
<td>Intellectual Property Right</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research &amp; Development</td>
</tr>
<tr>
<td>OEM</td>
<td>Original Equipment Manufacturer</td>
</tr>
<tr>
<td>ODM</td>
<td>Original Design Manufacturer</td>
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<tr>
<td>IR</td>
<td>Infrared</td>
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Abstract

In a global economy greater attention must be given to an amount of innovative companies in the manufacturing of products and in providing services. Innovative organizations must be able to learn especially in marketing and strategy efficiently and effectively in order to survive in today’s increasingly fierce competitive environment. Innovations thrive from a skilled and well-educated workforce, research and development resulting in Intellectual Property Rights, organizational infrastructure and business strategy if handled correctly.

Innovations play an important role and need a proper environment that provides knowledge, supportive interaction and incentive structures to become successful. Creating world-beating product concepts is of value only if you can bring them to market successfully. To focus a product innovation process around business objectives and plans allows company to create and evaluate a strategic positioning. Critical to success is the selection of appropriate targets for innovation, which requires identifying requirements throughout the existing value chain of products and services and the new value chain of the knowledge channel. But as it is likely that many of these requirements will be unclear and some will be conflicting, the way to resolve these conflicts is through mutually dependent learning involving participants from all relevant groups, including R&D, suppliers, and customers, plus distribution partners and other internal functional departments such as marketing, manufacturing, and finance.

A broader focus on innovation can generate increasing returns. Capturing and keeping a comparative advantage will require an appropriate pattern and shaking up the market with a major new product. Product innovation is a powerful lens through which to examine strategy because the success of your products in the market is the ultimate test of a strategy. Through the distribution we approach to highlight the thesis in threefold:

- Figure out different innovations;
- Draw on an in-depth understanding of bring the revolutionary new products to market;
- Generalize a host of product concepts spanning innovations in strategic positioning.

Aiming to fulfill the purpose of our paper, we conducted qualitative research method based on telephone interviews with two Swedish and two Chinese companies who have innovated.
products or services. The theoretical framework portrayed the innovator’s dilemma, push and pull marketing methods and prospector and defender strategic positioning models.

In conclusion, we generalized what kind of innovation (disruptive technology or sustainable technology) the four case companies have, which marketing method (pull or push) they adopt and how the strategic positioning is respectively. At the final section, we suggest a model for companies with innovations and how they differ on disruptive or sustainable technology and target customers.

**Key words:** Innovation, Invention, Technology, Marketing, Strategy
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1 Introduction

This first chapter starts with an introduction of the background and thoughts about the subject of this thesis. This is then followed up by a presentation of the problem that is to be investigated. Succeeding this are some parts that clarify the purpose and the questions to be answered in this thesis and another part that presents the limitation of the thesis. The chapter concludes with a presentation of the aimed users and readers of this thesis and what the results could be used for. The chapter finally finishes of with the structure of the thesis.

1.1 Background

This thesis came to see the daylight because we are interested in innovations and inventions and what may cause them to arise, but especially we are interested in what kind of differences there are between them. We also find it interesting to study how these are marketed and what strategies innovating companies use. But of course, there is also some curiosity on and interest for technology especially since most innovations comprises, at least to some extent technology.

Innovations are also interesting to study since they can actually be seen as engines for economical development and welfare. Innovations and inventions often result in higher productivity since they give us opportunities to alter and enhance the process of how things are being done.¹ The importance of processes and organization of how things are being done and the impact resulting from it was highlighted already back in 1776 by Adam Smith in his study on division of labour².

As the most of us have noticed the world changes as time goes by. New technologies develop and enter our homes as well as our work places and alter our behaviour. Big changes have happened during the last hundred years even though a statement, attributed to Charles H. Duell, the Commissioner of the U.S. Office of Patents in 1899, is as follows:

"Everything that can be invented has been invented."³

³ Duell quotation from: http://www.coasteltools.com/favorite_quotations.htm access: 051102
It is hard to imagine and to have a perception about what is going to be invented or developed and what will be reality in the future which also can be illustrated with another quotation from 1943 of IBM’s Chairman Thomas Watson:

“I think there is a world market for maybe five computers.”

Obviously, there have been a lot of inventions and innovations made and product development accomplished during the last decades and that has had an impact on our behaviour. Do you remember before when we didn’t have cellular phones? Back then we had to hunt for a public phone box if we were to make a sudden call. Nowadays there aren’t many public phone boxes left…

There are also numerous of examples on how difficult it can be to market or sell a product idea or an invention that can be seen as something revolutionary, and that also might consists of what we can call breakthrough technology, or something new that earlier not has been established on the world market.

As an example of how difficult it can be to market or sell a new product concept or idea is the problem that faced Steve Jobs, the founder of Apple Computer Incorporated, on his and Steve Wozniak's attempts to get Atari and HP interested in their idea of a personal computer:

"So we went to Atari and said, 'Hey, we've got this amazing thing, even built with some of your parts, and what do you think about funding us? Or we'll give it to you. We just want to do it. Pay our salary and we'll come work for you.' And they said, 'No.' so then we went to Hewlett-Packard, and they said, 'Hey, we don't need you. You haven't got through college yet.'

These examples presented above highlights our interest of investigating and studying different inventions and innovations, but also how they are marketed and the strategies used for catching the prospects that they might have by the companies.

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4 ibid  
5 As a curiosity: The name cellular in it self is due to the innovation that the transmitters that the phones use are arranged in “geographic cells”, which is a Swedish innovation.  
6 Jobs quotation from: http://rinkworks.com/said/predictions.shtml access:051103
But what is then an invention or an innovation?

To solve this dilemma and to find a distinction what they are and what might distinguish them we took help from The Oxford Reference Online, which presented several suggestions on explanations, but we found the following explanation on the word **Invention** as being most suitable for this study:

“The idea of a new product or a new method of producing an existing product. This is distinguished from an innovation, which is the development of an invention to the stage where its use becomes economically viable.”

We also looked up the word **Innovation** that also was explained in several ways in The Oxford Reference Online but were the following fitted our study best:

“The economic application of a new idea. Product innovation involves a new or modified product; process innovation involves a new or modified way of making a product. Innovation sometimes consists of a new or modified method of business organization. Many cases, for example the introduction of the credit card, have involved all these types of innovation.”

By this we can draw the conclusion that an **Invention** or an **Innovation** is either; a new product or a new way of producing a product, whilst innovation rather means commercialization of an invention. We can also assert that an invention might lead to innovation when it is; produced, used or commercialized. Our view is also that: the use of an innovation descending from an invention not by any means necessarily need to be done by the inventor. In the succeeding chapters of the thesis we will mainly make use of the word Innovation since that is within the aim of the thesis.

### 1.2 Presentation of the Problem

According to the authors of the book Breakthroughs! Does the process of inventing often start with some kind of a problem, and the thinking process, as well as a conceptual idea that has grown and developed in one persons mind. The thoughts of and about this concept and the problem and how to solve it is always in the mind of the inventor and leaves him at no rest.

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The mental picture and image of the invention is cultivated and developed in the inventors mind. This can be described as what Koestler, a philosopher and psychologist, calls a bisociative process and that can be defined as:

“An escape-from boredom, stagnation, intellectual predicaments, and emotional frustration... it is signalled by the spontaneous flash of insight which shows a familiar situation or event in a new light, and elicits a new response to it. The bisociative act connects previously unconnected matrices of experience; it makes us understand what it is... to be living on several planes at once.”

There are though other authors with another point of view on what makes inventions and innovations to be developed and come true. According to the authors of the book In Search of EXCELLENCE, are inventions and innovations often the result of customers’ needs and demands, as the authors writes: “Most of their real innovation comes from the market.” They argue that excellent companies are better listeners and as a result thereof can develop products that are wanted or even already invented by the customers and that the excellent companies just develop these inventions further, many times working together with the customers.

They also highlight the problem that managerial practices in many companies not are practised in such a way that customers’ needs and demands are being taken care of:

“All too often the product is designed in a vacuum, the pipedream of engineers who love the technology but may never have seen living, breathing customers use their companies’ products.”

If a company wants to be successful and benefit from the possibilities of innovating what the customer actually needs and wants, they have to be responsive to what they may hear from the market concerning customers’ wishes on innovations. Peters and Waterman Jr. write:

10 Nayak, & Ketteringham (1986) p:18
14 Peters and Waterman Jr.(1982) p:196
“It is our belief, based on the excellent companies review, that the user is supreme as a generator and tester of ideas.”

There are later articles that advocate a third view that inventions and innovations many times come from subcontractors or strategic partners to larger companies. Companies often involve themselves in strategic partnerships, especially in high-tech industries, to win competitive strengths. In many cases this also affects how companies are organized and structured. Research and development can be conducted by subcontractors or strategic partners to bigger firms. Earlier, big firms often used to acquire other smaller firms to get access to new technologies or to inventions and innovations. But now there seems to be a trend toward other arrangements where companies engage in co-operations and joint ventures with other companies, jointly owning and starting up subsidiary companies in purpose to obtain speed and creativity:

"The movement in large companies away from in-house development to partial ownership reflects an awareness that smaller firms are much faster and capable of, innovating and product development."  

Obviously, there are several different reasons why inventions and innovations arise and meet the daylight of the future. There could be brilliant minds holding ideas, customers’ wants and needs, subcontractors’ contributions to larger firms and so on. This also ought to mean that there are different kinds of inventions and innovations, maybe due to who has come up with the thoughts and ideas of them. This highlights several crux issues for companies: How should they do to utilize the prospects to prosper from inventions and innovations, how should invented products and innovations be marketed to be successful, what strategies should companies use when they handle and works with inventions and innovations? This puts pressures and demands on the leaders of companies and they have to take several difficult decisions about how to do things, how to market inventions, how to defend the company against competitors or make the company prospect of opportunities given and a lot of other questions to be solved.

15 Peters and Waterman Jr.(1982) p:197
There are for instance several ways on how to market products and that need to shed some light on during these circumstances. There ought to be differences in the marketing techniques depending on what kind of invention or innovation it is. Since inventions and innovations can arise in several ways, due to customers’ demands and needs, due to subcontractors skills and ideas, or just the mere wishes of a brilliant mind to solve a problem or turn a thought or an idea into reality, and which ought to rise different demands on the marketing and the strategy. The well known author on marketing strategies and principles Philip Kotler writes about push and pull strategies, where a push strategy can be described as a method of using marketing techniques to push products out to the customers through different marketing channels, whilst the pull strategy can be described as a method of influencing the customers demand for products by advertisement and promotion\(^\text{17}\). There are many decisions and choices that need to be done by the management of inventing companies and this thesis has been aimed at studying how inventing companies handles issues and problems as those mentioned above.

### 1.3 Purpose

The purpose of this thesis has been to study and investigate how companies handle inventions and innovations. We have been trying to find out what different kind of inventions or innovations there are and how these are marketed, but also what different strategies companies’ uses to handle these.

### 1.4 Framing of the Questions

To be able to fulfil the purpose of this thesis we have chosen to work with the following questions:

Q1: What different kind of innovations can we find and how are they handled by the studied companies?

Q2: How are invented or innovated products being marketed by the studied companies?

Q3: What strategies do the studied companies use to utilize the prospects of invented or innovated products?

### 1.5 Delimitation

- This thesis focuses on companies from two countries Sweden and China. Since one of the authors is Swedish and the other is from China, it facilitates to gather materials from the two countries.

• Due to the time constraints, we limited our investigation on four companies which are Swedish Hörnell International AB which invented Speedglas welding helmet, Swedish Log Max AB with innovation on harvesting heads, Chinese Xerxes created USB flash driver and Chinese ZTE as pioneer of GoTa program.

• Refer to the theoretical framework there are sufficient models and theories on innovation, marketing and strategy in this study field. From the innovation point of view, the marketing model *Pull* and *Push* and strategic positioning *Prospector and Defender* are more tightly relevant to this particular issue and there are some inherent connection between.

• The frame of reference is more suitable for manufacturing and production oriented companies. However, one of the Chinese case companies appears service oriented.

• Owing to time and space restraints, we didn’t dwell into technical concepts involved. Rather, we have focused on argumentative side of the concepts.

### 1.6 Aimed Users and Readers

The aimed users and readers of this thesis could be anyone who’s interested in inventions, innovations, marketing and strategy, but also students as well as individuals from the economic life. This study might also be of interest for researchers and scientists who have an interest within the studied area.

### 1.7 The Structure of the Thesis

As a service to the reader of the thesis we have chosen to present an easy overview of the structure to make it easier to find different chapters:

Chapter 1: This chapter contains; the introduction and background on the study, the purpose of the thesis and the questions that were studied.

Chapter 2: Here we give our view on methodology, interpretation and science.

Chapter 3: In this chapter we present the theories that we have chosen to work with in this thesis.

Chapter 4: We presented the empirical data from two Sweden companies and two Chinese companies in this section.

Chapter 5: At this part we analyzed the four case companies on innovation, marketing and strategy three aspects respectively.

Chapter 6: In the final section, we generalized the conclusions upon to the research questions and suggested a model for companies with innovative products or invented service.
2 Methodology

This chapter is presented to illustrate the reader with the scientific methods that were practiced in the development of this paper by concepts and procedures. It describes the idea of how to perform the scientific approach with the tools collected by the empirical data, namely how the empirical part of the thesis will be executed; i.e. how the study shall be conducted.

2.1 Scientific View

Methodology is used as a tool by which we solve problems and create new knowledge. It provides route signs for undertaking a research process as well as helping authors to write the project report. There are two basically opposite approaches to be chosen from when writing scientifically. Generally, two major scientific types of approaches are known for the research conduction: the positivistic approach, which establishes consistent scientific facts and hermeneutic approach, which interprets the subjective drawing to the research topic.18

Hermeneutics in its’ modern variants consists of both attempts to create a methodological teaching to interpret meaningful phenomena and also describe the conditions which make it possible to understand meaning.19

We are inspired by the hermeneutic view in writing this thesis due to the nature of our study, which is based on case studies and some interviews. We would need the subjectivity in proper interpretation of gathered information from rather unstructured empirical data through understanding the value system, feelings and motivations of the subject (in terms of our own thinking and understanding of the viewed issues).

2.2 Research Approach

Analytical approaches are distributed deductive and inductive techniques. It is not very clear which theory are used when you are doing the research, but it should be explicit when you present your result. Deduction draws conclusions through logical reasoning and induction draws general conclusions from empirical observations.20

19 Gilje, N. & Grim, H. (1992), Samhällsvetenskapernas förutsättningar, Daidalos: Göteborg
20 Denzin, N. & Lincoln, Y. (1994)
Deductive thinking could be described as developing a theory and hypothesis (or hypotheses) and designing a research strategy to test the hypothesis. However, with inductive thinking separate facts or instances are brought forward to prove a collected data and developed theory as a result of data analysis.\textsuperscript{21}

We believe our approach to the study is more deductive, since existing theories are connected to findings based on the case studies. Through the theories acquired to our knowledge we judge our empirical findings in proper measurement. We utilize established models on innovations, marketing and strategy three aspects to refer the theoretical segment of our research and to look upon their principles for the breakthrough technology case companies. In fact this thesis is partly an inductive study, where empirical data is first collected through interviews and then theories are developed. The reason why choose an inductive approach is a willingness to stay open to new findings and thus prevent important and interesting conclusions to be lost in the process.

2.3 \textbf{Research Methods}

Generally, two main theories on method are recognized: qualitative and quantitative methods. For Smith and Thorpe (2002), Quantitative method is a research method that relies on analysis of numerical data, figures and statistical analysis. It is a method of involving numerical and statistical variables over the bridge of data collection procedures. The advantage of a quantitative approach is that you can quantify large amounts of data with the help of standardized measures that can be generalized and compared to other data.\textsuperscript{22}

Qualitative research is multi-method in focus, involving an interpretive, naturalistic approach to its subject matter. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret phenomena in terms of the meanings people bring to them.\textsuperscript{23} Qualitative methods encompass characteristics like understanding, validity, and discovery. In a qualitative approach the researcher is continuously evaluating and working with the information he or she retrieves. This can generate new questions and ideas that were not thought off before. Qualitative studies aim to investigate what it is that characterizes an event, how it can be identified and so on. The gathering of data becomes an

\textsuperscript{23} Denzin, N. & Lincoln, Y. (1994)
interactive process, where constant evaluation of pieces of information can lead to new
discoveries. On the other hand, a qualitative approach will present a hoard of detailed
information about a smaller and more condensed amount of people and/or cases.

We aim to conduct case studies on four companies with innovations, so qualitative method is
considered to suit and appropriate for our research. Interpretation from part to whole, context
and function is necessary when you have access only to limited information. The focal point
of our research would be based on telephone interviews with emphasis on visual perception.

### 2.4 Data Classification

There are two data collection techniques that are involved in research: *primary and secondary*. Primary data collection is a method in which data is gathered for first time for any specific study. There are numerous techniques involved in getting this data. Depending on the investigator; either it can be communicated directly or indirectly depending on the study. In-depth interview, focus group and other qualitative techniques like telephonic surveys and interviews are involved in direct communication techniques. In contrast, secondary data collection methods are linked with collection of data from an existing study. It is a kind of data which is obtained from magazines, journals and related literature of previously conducted studies.

Primary data is such data that has been gathered for the task at hand, whilst secondary data has been collected at a prior occasion for some other purpose. The advantage of secondary data is that it is quickly gathered and that the cost of gathering it is low. The disadvantage of it is that it might be less recent and not quite as relevant as primary data. We try to do our utmost to weed-out and replace the irrelevant and obsolete information through our processing of writing the thesis.

For our approach, we use both primary data and secondary data sources for our thesis. In our study, primary data belongs to direct interviews (phone-calls and emails to contact persons) and questionnaire, through which we got information from two Chinese companies Xerxes and ZTE & two Swedish companies Hörnell International AB and Log Max AB. The primary

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26 Ibid
data would be interpreted in our own understanding and presented in the analysis. In the secondary source data, it contains websites, books, articles, annual reports, journals, magazines and related materials at some points would also be paraphrased in our way of comprehension but it will keep the initial meaning.

2.5 Case Study

With many different types of study to choose from to conduct the research, we strongly consider that the most qualitative evaluations characteristically take the form of case studies, with respectful attention to context.

According to Robson (2002:178) case study is defined as “a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence”. Case study research excels at bringing us to an understanding of a complex issue or object and can extend experience or add strength to what is already known through previous research. The case should be chosen with “what”, “why” and “how”. From analyzing the unique case, the purposes should be worked out.

Case studies are of value in refining theory and suggesting complexities for further investigation, as well as helping to establish limits for generalization. Also, it can be a disciplined force in public policy setting and reflection on human experience. The purpose of case study is not to represent the world, but to represent the case.

Under the more generalized category of case study existing several subdivisions, each of which is custom selected for use depending upon the goals and/or objectives of the investigator. These types of case study include the followings: Intrinsic case study is undertaken because one wants better understanding of this particular case. Instrumental case study means a particular case is examined to provide insight into an issue or refinement of theory. Finally, collective case study is when there is less interest in one particular case. Researchers may study a number of cases jointly in order to inquire into the phenomenon, population, or general condition.

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29 Denzin, N. & Lincoln, Y. (1994)
Innovative companies! Innovation, Marketing and Strategy

We conducted four case studies in order to discover the main causes, marketing and strategy for innovation companies. We think collective case study is suitable to support our thesis. We aim to generalize a conclusion on the inventing companies, so it is less persuasion if we administer an investigation on single one certain company. In order to diminish the risk, we conducted research on two Chinese companies Xerxes and ZTE & two Swedish companies Hörmell International AB and Log Max AB to gather fruitful information for generalizing the conclusion.. Anyhow we believe our analyses on those companies help to answer the research questions and make our standpoint strongly.

2.6 Research Design

Inspired with approaching our aim and other studies, we have developed a flow chart to illustrate our research process. Some steps would be ignored to repeat explaining as they were stated at previous sections.

- Finding out of problematic area
- Pre-study

In order to get a grasp of the selected topic, a general study of innovation, as well as literature about marketing and strategy was conducted. After a pre-study had been conducted and the focus of our thesis was decided upon, the next step was to make a choice of research methods.

- Selections of research Methods
- Literature review

The aim of the literature review was to go through relevant information on our topic including what research that had been done in the field of innovation as well as what has been written about strategies and marketing. The literature search was carried out by looking through literatures such as *The Innovator’s dilemma*, *Principles of Marketing and Organizational Strategy*, *Structure, and Process* as well as relevant magazines and newspaper articles.

- Determination of data collection

A Large extent of companies involved with breakthrough products differ in type of industry and items being handled. We decided to focus on technology field, as these were thought to have longer experience in general of business interactions which would increase the validity of the study.

- Access to companies

To gain access to the companies of interest, we sent e-mails and introduction of our thesis to five Chinese companies and four Swedish companies. The e-mail was followed-up by a phone
call and further e-mail correspondence to set up telephone conversation appointments. One of the Swedish companies didn’t reply the email at all and another replied too late. After contacting the five Chinese companies, one didn’t reply us; two out of five are the innovator domestically through confirmation, so only two companies applied to our thesis. Among of the research companies, two of them are located in China, so telephone interviews and email are practical to gather primary information.

Chinese companies have low transparency and it’s hard for them to disclose information on R&D, marketing and strategy. Firstly we called the switchboard of Xerxes, and then unfortunately our phone was refused to transfer, the explanation was that our topic related to company’s secret and it was inconvenient to release. Then we tried to reach marketing department directly, but the replier only could give us very short answer upon a few questions, because some information was not open even inside of the company. Therefore we had to get in touch with key persons in the company with friends’ contacts and help. As required the company’s name Xerxes is fictitious and the respondent from ZTE doesn’t publicly show her name either. The core contents were written in English and sent to us by email. Through the conversation with the two interviewees, the answers were explained in detail.

The Swedish companies finally used in this study were found and contacted through the help of a personal contact. When the contact had been established did the interviewee show much interest and engagement for the study and tried to be as helpful as possibly. This interviewee was finally used for both of the Swedish case companies since it turned out that he recently had been engaged at the second case company which also fitted the purpose of this thesis. The interviewee openly talked about the companies and contributed with as much information as he could. He also is rather familiar with students and occasionally holds guest lectures for Business and entrepreneurial students which might be the reason for his big engagement and helpfulness for this thesis. The first interview was partly unstructured were the interviewee had possibilities to add interesting information himself. The second interview was a bit more structured with added question as a result of the first interview. All the interviews done with him were being recorded so that nothing would be missed and he later also read the written empirical material so that nothing would be misunderstood, misinterpreted or incorrectly translated from Swedish to English.
- Evaluation of empirical data

Our empirical study is based on telephone calls and emails with R&D experts marketing representatives and managers combined with valuable information regarding the case companies. When interviewing a person, the findings will never be the untainted truth; it will always be an interpretation of a situation. We considered the bias that can unwillingly become a part of the data.

We sent questions previously set by email to the companies. The result is not as good as we expected. The answer for each question is too short and some questions are ignored, since the solutions by written are too formal and sensitive probably. After that we followed up semi-structured telephone interviews. We had a list of pre-verified questions we were about to ask, but we didn’t push the respondent to give us the answers we wanted to hear or to limit our respondents in any way inflexible. The telephone conversation was conducted in a freedom of answering the questions in broader scene of discussion. The only leading questions were asked for the verification of the answers. In a perfect world all interesting data would be attainable, but due to the confidential nature of some company facts some information cannot be treated in research studies.

- Analysis and interpretation

During our analyze process, we explained the empirical statements according to the frame of reference in our thesis.

- Conclusion and implication

We presented our final findings and developed one model. Making generalizations based on a few sources is always risky. However, we hope our contribution would be academic value and give innovation companies some reference.
When carrying out the research, any author might run the risk of perversion and misinterpretation. In order to achieve a high standard quality study the writers must ensure the right answers to the study questions. A proper conduction of the study depends on how good the study design is prepared, which would reflect on how valid and reliable the measurement of factors and results of interest.\textsuperscript{30}

The timeframe affects the validity of the collected information. If there had been more sources and information collected a broader generalization could have been drawn from it than with these delimitations. This might also result in undiscovered phenomenon that where not revealed during the time when the study was performed and that might have needed more time to be discovered. Anyhow we do our utmost to keep our work reliable and our statements

valid. Another limitation on the study is given by the dependence of the honesty and straightforwardness to reveal and openly talk about the questions that might have been asked to the respondents. The interviews might also have been done with respondents that were not perfectly aware about the topics and this might have occurred due to absenteeism of more proper respondents. However, we appreciate that the repliers’ comments are valuable for achieving our purpose.

2.8 Pre-understanding

Authors of a thesis should also leave a report on their pre-understanding of the studied field. This pre-understanding affects the interpretation of the facts-findings within the empirical study. This pre-understanding can also be seen as a ground and a prerequisite necessary to understand the studied field.31

The pre-understanding for the studied field and the subject that both of the authors possesses are acquired from the university education within business administration that both has taken part off. One of the authors has also been working as a Market assistant at a small Swedish export company manufacturing innovative industrial products. At this office post reporting directly to the Managing Director of the company had this author extensive responsibility for international marketing and sales of the company. This author also was involved in product development and suggestions from customers and subcontractors and a lot of other activities than can be seen as having resulted in pre-understanding for the studied field. The other author has worked at an accounting and financial department in a Chinese state company for five years. She is familiar with how Chinese companies handle business and the situation in China. She also worked for a few trading companies in Sweden, so she got some knowledge at Swedish companies’ perspective. At present she is running her own company in Sweden. She participated and made decision on the business idea, contact supplier, target customer and company strategy and relevant things. Her academic study and work experience provide pre-knowledge on writing this thesis.

3 Theory

In this chapter we are presenting the theories that we have chosen to make use of in this thesis. The first section of this chapter presents the theoretical framework around innovations. The succeeding sections present the theories on marketing and strategy.

3.1 The Innovator’s Dilemma

Before the presentation of the theory on innovations we just want to give a reminder of our conclusion from chapter 1.1: “By this we can draw the conclusion that an Invention or an Innovation is either; a new product or a new way of producing a product, whilst innovation rather means commercialization of an invention. We can also assert that an invention might lead to innovation when it is; produced, used or commercialized. Our view is also that: the use of an innovation descending from an invention not by any means necessarily need to be done by the inventor.”

Though there aren’t many theories to choose from when looking at innovations have we found one and that theory is developed by Clayton M. Christensen at Harvard Business School. The theory: The Innovator’s Dilemma, is presented in his book with the same name and by this reason has it also been very hard, or actually impossible, to find other sources to support the theory with, since they all refer back to Christensen. This theory is developed by studying several well-managed successful companies atop of their industries but when faced with new technologies and new markets they finally failed.

The companies studied by Christensen, who then developed the theory; The Innovators’ Dilemma, listened intensively to their customers’ needs and wishes , invested in new technologies but still in the end lost their markets. Christensen argues that the reason to why these companies finally lost their leadership and failed were actually that they listened to their customers, invested in new technology to produce products, that continuously gave their customers better products, monitored their market closely to follow the market trends and allocated investments to receive best possible return.

Christensen argues that good management is dependent on the situation and has to be changed when facing new circumstances. He mentions that there are circumstances when it is right to not be listening to the customers and to invest in products that result in lower performance and that also even result in lower margins. It can be right to focus on smaller markets rather than bigger substantial markets. He has developed principles of disruptive innovations and when good companies failed often due to that the managers of these companies didn’t follow these principles. These principles can be helpful to managers when faced with disruptive technologies.33

Christensen has built a failure framework from the findings in his study. In this framework there are three findings or elements as the author also calls them, used from the study. These findings state a strategically distinction between sustaining and disruptive technology which the pace of the technological progress often outstrips the need of the market, and this leads to differences on the markets over time to how competitiveness and relevance are influenced due to technology approaches. Finally these findings also show that the customers and financial structures of successful companies influence what investments seems to be attractive to these companies relative to companies entering new markets.34

3.1.1 The Elements of the Framework

Technology

*Sustaining technology* is technology that improves product performance on existing products in some way. Sustaining technologies can be discontinuous or radical but also incremental in their nature. These technologies improve the performance on established products that are being used and valued by the customers today. The most technological advances in the industries are of a sustaining art.35 The variation of a core technology in an industry: “...evolves through long periods of incremental change punctured by technological discontinues.”36

Technologies within industries go through evolution which causes dominant designs and configurations to arise and become standard. Those standards give companies the possibilities

33 Christensen (1997) p: viii-xiii
34 Christensen (1997) p: xiv -xv
35 Christensen (1997) p: xv
to optimize production. The standard architecture of designs and configurations are preserved by incremental evolution until new discontinuous advances result in new cycles of variations and development. Technological discontinuities are described as affecting either underlying processes or the products themselves. These discontinuities result in fundamentally different product forms than the earlier products had and give opportunities to decisive cost, performance and quality enhancements over prior products.\textsuperscript{37}

Disruptive technology is new technology that has other features than the existing technology. In the beginning does mostly this new technology result in worse product performance than the existing products on the market possesses. But this change as times goes by. Disruptive technology has other values that have not earlier been available on the market and therefore differs from the values of the customers in the beginning, due to this product with disruptive technology underperforms established products in the mainstream market. But since those new products have other features than the older ones had, they are valued by marginal customers. Products with disruptive technologies typically are cheaper, smaller, and more convenient to use.\textsuperscript{38} Further development of the disruptive technology improves the performance on the attributes appealing to the mainstream market customers to a satisfactory level. Existing products develops as well so the disruptive technology products may be inferior against these products despite the performance improvement. A technology disruption occurs when the products with disruptive technology displaces existing mainstream market products even though they still yet suffer from inferior performance on the key attributes.\textsuperscript{39}

The dynamics of disruptive technologies are: “…incumbent technologies that are displaced from the mainstream market by technologies that underperforms them on the performance dimensions that are most important to mainstream consumers; mainstream consumers who shift their purchases to products based in the invading technology, even though those products offer inferior performance on key performance dimensions; and incumbent firms that do not react to disruptive technologies in a timely manner.”\textsuperscript{40}

\textsuperscript{37} Anderson, P. and Tushman, Michael L. (1990)
\textsuperscript{38} Christensen (1997) p: xv
\textsuperscript{40} Adner, Ron. (2002) p:669
**Market demand in contrast of technology improvement**

Prevailing technology can progress faster than the market demand. This might result in products that overshoot the market demand due to efforts from producers to deliver better products than their competitors. The cause of this can be the hunting of higher margins and prices which may result in products which are more advanced and give the customer more than they actually need and are willing to pay for. But this also means that disruptive technologies that may underperforms today very well might be the performance competitive winners of tomorrow’s market depending on the market’s needs and wishes.⁴¹

![Figure 2: The impact of disruptive technological innovation when existing products overshoots customer needs and demands. Disruptive innovations will under-perform existing products in the beginning but will later satisfy customer needs and demands over time.](image)

**Rational investment and Disruptive technologies**

Investing in disruptive technology is not considered as being rational for established companies by three reasons: The first reason is that since disruptive products are cheaper and simpler than existing products they generally result in lower margins without greater profits. The second is that disruptive technologies are first commercialized and marketed towards emerging or insignificant markets. And the third is that leading companies most important and dominating customers and therefore also the most profitable ones’ don’t want or even got the

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⁴¹ Christensen (1997) p: xvi
⁴² Christensen (1997) p: xvi
possibility to use the disruptive technology products. Disruptive technology appeals and are mostly embraced by the least profitable customers on the market. Companies are used to listening to their customers and trying to identify new products which promise higher margins and growth are unwillingly to invest in disruptive technologies, and if they finally do they most often do it too late to be able to benefit from it. Managers may hesitate about or are reluctant to make investments that might cause the company to suffer economically in the short term but that can prove to be favourable in the long term. Managers being held responsible for earnings, costs, expenses or other measures and that also maybe are being evaluated by them can choose to act on a short term basis. This is known as: investment and operating myopia. There are also external pressures on companies from owners and institutional investors that might cause companies to focus on short term profit. These investors can have aversions against risks and be reluctant to hold investments which don’t give a reasonable payoff immediately or in a near future.

3.1.2 The Principles of Disruptive Innovation

To be able handle disruptive technologies there are no standard methods can be used. However, there are some sensible ways on how to handle this issue. There are organizational forces that managers at companies struggle with and these forces also more or less stipulate what a company can and cannot do and they might cause managers to fail when facing disruptive technologies. Organizational forces that influences and limits what a company actually can do or not in a given situation are for instance; how a company is designed and structured, the age of the company, what technology a company possesses and its environment, to mention a few.

Christensen proposes the existence of four laws or principles of disruptive technology. If managers understand and can handle these principles in an adequate way they might even can succeed when facing disruptive technology. These principles and how to handle them are described below.

43 Christensen (1997) p: xvii
46 Christensen (1997) p: xviii
Principle 1: - Dependence of customers and investors for resources -

This principle highlights the fact that while managers think they’re in control of the flow of resources into the company, whilst the reality is the customers and the investors that actually control these resources. The reason why the resources are being controlled by others than the managers is that if the company have an investment pattern that not satisfies the customers and investors the company will in the end not survive. The highest performing companies are best at this since they have developed systems to divest and get rid of ideas that the customers don’t want. Due to this the companies don’t invest in low margin disruptive technology opportunities that their customers don’t want, until their customers finally want them and by then it is too late. The only successful way for a company to handle the situation of emerging disruptive technology is to start up a new autonomous and independent organisation in purpose to make business of the disruptive technology. By doing so, managers can handle the forces to control the flow of resources into the company. Otherwise a company cannot freely allocate resources needed to handle disruptive technologies and enter into small emergent markets. It is also very difficult for a company that has aligned all its cost structure towards a high-end\(^{49}\) profitable market to be profitable in a low-end\(^{50}\) market. The only way to handle this is to create an independent organization with a cost structure fitted to be profitable within a low margin market with disruptive technology.\(^{51}\)

There are some evidence from High-Tech industries that companies either let outside small firms innovate and develop products and technologies or that they form joint ventures with other companies to do the same to be able to harvest from the innovations and development from independent entities.\(^{52}\)

Principle 2: - Growth problems for a large company in a small market -

Disruptive technologies enable new emerging markets and there is evidence that early entering companies have a first-movers advantage against later entering companies. As companies grow bigger due to success it is progressively harder to enter newer smaller

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\(^{49}\) Relating to or associated with the most expensive section of the market (www.oxfordreference.com)

\(^{50}\) The opposite to a high-end market

\(^{51}\) Christensen (1997) p: xix-xx

markets that might be the big markets in the future. The bigger a company becomes the weaker the argument that emerging markets can be a useful way to obtain growth for a large company. Often companies implement the strategy of waiting until this new market has grown to a size of interest but this has proved to be an unsuccessful strategy. Those companies that have had success in new disruptive technologies markets are those have let new smaller sized organisations enter the market and handle the situation. These new smaller organisations can more easily seize the opportunity to grow within a small market than can a bigger sized company even though the market in the end might grow big.53

**Principle 3: - If the market doesn’t exist you can’t analyze it -**

Companies with activities on markets with sustaining technologies innovations can make use of market research and planning since these are the tools of a good management. This is an approach that are feasible on a market where sustaining technology is dominating since the market growth and size of the market is known and the stages of the technology progress are established and mostly also is in accordance with the customers’ needs and demands on the products. Since this is the case the most managers at companies have learned to use market planning and analysis to be able to meet and cope with sustaining technology innovations on the market. But this approach is not very feasible when it comes to disruptive technologies and new emerging markets. The markets of disruptive technologies are the least known and thereby also the one that benefits least from market analysis, this leaves the chance of the possibility to benefit from the *first mover’s advantage* and this is the *innovator’s dilemma*. Companies used to analyse and quantifications of markets to make projections forecasts become paralyzed when faced with new disruptive technology markets since there are no market data to analyse and to make decisions from. To use planning and marketing techniques that where being used on large well known sustaining technologies markets don’t prove useful on those new markets. Confronting disruptive technologies markets rather require a *discovery-based planning* where managers should assume that the forecasts and projections as well as the strategy they have chosen to use are wrong rather than right from the very beginning. Instead of using old knowledge from other markets managers should be prepared to develop a plan for learning what needs to be learned from the news markets to handle investment and managing on these new markets. This is a much more effective way to handle these new markets and to confront disruptive technologies.54

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53 Christensen (1997) p:xx-xxi
54 Christensen (1997) p:xxi-xxii
**Principle 4: - Demand and technology supply might differ on the market -**

The markets of the disruptive technologies are initially small and remote from the mainstream markets. They are however disruptive since they can become fully performance competitive within the mainstream markets and pose a threat against established products. This is possible since the pace of technological progress on the products performances is faster than the customers demand and absorbing ability for the performance enhancement is. This also implies that products that fit the markets demands and needs of today on features and functionality will overshoot these needs and demands on tomorrow markets due to additional product enhancement. But this also means that products that might be seen as underperforming today, as has been attributed to disruptive technologies, very well might meet the needs and demands of the market tomorrow. If customers perceive that products have improved beyond their requirements on performance other factors will finally influence the choices customers’ make and finally this ends up in choices based on prices. If companies strive to develop their products too much and too fast they might overshoot the customers demand. This might result in opportunities for disruptive technologies companies to enter the market with low-price products that satisfies the customers demand. The only way for a company to handle this issue is to measure the trends on how mainstream customers use their products and thereby be able to find points at where the competition in the market will change.55

**How companies can deal with disruptive technologies**

The companies in the study performed by Christensen was very well managed and the leaders very competent. Even yet some of them failed when facing disruptive technologies. But this doesn’t mean that these companies completely has to change the way they do things since despite all the methods used by the companies has helped them to be successful in the market earlier. The difference is that they have been acting in a market where sustainable technology changes are common but not disruptive ones and the organisations are suited to tackle the former but not the latter. This means that managers must recognize that the methods used on mainstream56 markets may need to be altered and changed when faced with disruptive

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56 the ideas, attitudes, or activities that are shared by most people and regarded as normal or conventional (www.oxfordreference.com)
technology changes. But there is no need to divest a company structure that has been successful earlier it rather means that managers must understand that when faced with the situation of disruptive technology these has to be handled and tackled in another way.\textsuperscript{57}

**How to handle disruptive technologies**

The development of market demand on products may differ vastly from the technology development of products and this may result in that products that might be of no interest for the market of today due to underperformance in comparison with today products might become mostly interesting for the market tomorrow, as often is the case with disruptive technology. This also implies that it is important to have knowledge about and to keep track on the customer preferences today since that is a good way to handle sustaining technology innovations but at the same time one must realise that customers today does not know what innovations they want to have tomorrow. For this reason it is important to understand that customers can’t lead companies to innovations since they aren’t aware about what they need tomorrow. One thing a company can do is to follow the market closely and analyse conditions and try to map the trajectory of the technology to be able to reveal which situation the company faces.\textsuperscript{58}

To be able to handle and manage innovations it is also necessary to handle the resources. Product ideas or products that receive much attention and a lot of resources will face a much brighter future than those with less resources and little attention. So the resource allocation is to be considered as being crucial for the possibility to develop an innovation or an innovative idea into becoming a success. There is also a risk that the managers of companies may not pay as much attention to the skills and knowledge of the employees working on disruptive products and products ideas. This is mostly due to that managers often pay their attention towards products which seems to be more financially attractive and thereby also affect the resource allocation to be more beneficially biased against the most financially attractive products.\textsuperscript{59}

Marketing disruptive technology products also require other marketing strategies than those for sustaining innovations. The marketing of products with sustainable technologies is aimed

\textsuperscript{57} Christensen (1997) p:207-208
\textsuperscript{58} Christensen (1997) p:208
\textsuperscript{59} Christensen (1997) p:208
at supplying existing customers with better versions and better performing products than the older products whilst marketing disruptive technologies should be aimed at new markets with new customers. Disruptive technologies should rather be seen as a marketing challenge rather than a technology challenge.  

The organization of a company is most often specialized and used to work within a specific market and context. As a consequent thereof, the capacity and values of the organisation and its network are adjusted against these circumstances. When producing and market products under these circumstances a company should face no bigger problems. They are used to produce, develop and handle products with a certain gross margin and of a known production size within a known market. But when faced with new disruptive technologies these characteristics may become a problem since markets differ, gross margins are others than the known and the markets are new and might be unsure to the organization. So the capabilities of the organization must meet these new circumstances that raise new demands on it. This also requires that investments on these new markets face new circumstances. Investments that seem to be unfavourable might in the end turn out to be favourable. The organization and the management of it must be prepared to learn to handle new circumstances and which also might include failures that shouldn’t be accepted earlier within the organization. It is important to recognise and to understand that facing disruptive technologies is risky and demand new skills and experiences to be learnt from. It’s important to understand that one has to accept failures and losses that contribute to experiences and learning. By being prepared to meet failures and losses a company can make several tries to meet the market with disruptive technology but that might in the end eventually lead to success.

The strategy for marketing disruptive technologies is rather important. When marketing sustainable technology which is used to improve already existing products, a company can choose between being the market leader or a market follower. But when it comes to disruptive technologies it is rather important to be first in the market with the new technology and to be the leader of it especially since there are first mover advantages to benefit from.

60 Christensen (1997) p:208-209
It is important for managers to understand that new and small markets for disruptive technologies have different entry barriers and that these markets also are more movable than those of the mainstream markets. A small company can benefit from building a new small market for disruptive technology and that this serves as an entry barrier towards larger companies since for them it make no sense to invest in small markets. To invest and make entries into small markets does not fit with the models of how large companies do their business. But larger companies can actually surmount these barriers of entry if managers understand the conflicting demands between sustainable and disruptive technologies and thereby solve the dilemma facing innovators. Managers must create organizations that sufficiently supports and is aligned against the power of the customers but that also give necessary possibilities and opportunities to innovators of technologies.  

3.2 Push and Pull Models

The notion of push strategy and pull strategy has gained currency in the corporate world. By Charlie Cook (2005), there is a proper metaphor describing push and pull marketing models. Marketing is like rowing. You pull hard on the oars to go forward, then lift them out of the water and push them back to finish the stroke and get ready for the next pull. Once you get the sequence of the stroke right, you will build speed and momentum to have the boat slip forward through the water. In contrast, if you push when you are supposed to pull, the boat goes backwards, or even worse, you lose your balance and fall down into the water. Companies must consider the promotion mix when they develop their new products. The promotion mix is influenced by whether the company adopts a push or a pull strategy. Its two components-push strategy and pull strategy can be utilized either exclusively or in combination. This diagram illustrates the comparison of push model and pull model.

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63 Christensen (1997) p:210
64 Cook C. (2005), Push then Pull Marketing, *Blue Boulder Publishing*
Push Model

**Figure 3:** Push versus Pull Promotion Strategy

### 3.2.1 Push Strategy

Push strategy is defined as “A promotion strategy that calls for using the sales force and trade promotion to push the product through channels. The producer promotes the product to wholesalers, the wholesalers promote to retailers, and the retailers promote to consumers”\(^67\). It uses the benefiting organization’s communications channels and influencing audiences with the purpose of getting the word out about your organization or cause to convince potential supporters to join or support you. Brochures, direct mail, newsletters, phone calls, speeches, exhibits email and websites are generally used to communicate with a large group of potential supporters.\(^68\)

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\(^66\) Kotler et al. (2001) p.650
\(^67\) Ibid
3.2.2 Pull Strategy

Pull strategy is defined as “A promotion strategy that calls for spending a lot on advertising and consumer promotion to build up consumer demand. If the strategy is successful, consumers will ask their retailers for the products, the retailers will ask the wholesalers, and the wholesalers will ask the producers”\(^{69}\). It involves talking directly to primary audience to persuade them to take action on your behalf. The organization is striving to “pull” the target audience into the fold, and is most powerful when you have developed a solid reputation as a leader in the field. The organization uses strength and exemplary actions to attract supporters. Message and calls are often used as communication tools to support pull strategy.

3.2.3 Push-Pull Strategy

Push-Pull strategy is a combination of the two strategies-planning and timing your “pull” initiatives with your “push” initiatives. You use persuasive methods directly with your primary audience (pull), while at the same you utilize existing or new targeted communications tools (push)\(^{70}\). Push strategy and pull strategy are not mutually exclusive\(^{71}\). Most large companies use some combination of both push and pull strategies. They use mass-media advertising to pull consumers to its products and a large sales force and trade promotions to push its products through the channels.\(^{72}\)

The typical push-pull strategy is to pull prospects in and then in the context of a growing relationship push useful information out to them. If you want prospects to remember your firm when they have a need for your services, start by attracting their interest.

3.2.4 Push vs. Pull

Push strategy is designed to be in advance to areas of highest anticipated need. Push approach treats people as passive consumers whose needs can be anticipated and shaped by centralized decision-makers.\(^{73}\) Segmentation efforts and tailoring marketing programs are more effective than advertising. Especially the big retail chains have greater access to get what they want from suppliers. And manufactures also obtain good shelf space and advertising support from their retailers.\(^{74}\)

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\(^{69}\) Kotler et al. (2001) p.650
\(^{70}\) Miyamoto (2000)
\(^{71}\) Hagel, J. (2005)
\(^{72}\) Kotler et al. (2001)
\(^{73}\) Hagel, J. (2005)
\(^{74}\) Kotler et al. (2001)
Pull strategy requires taking initiative and creatively address opportunities and pull platforms are designed from the outset to handle exceptions, but push programs see exceptions as indications of failure. Pull models treat people as networked creators who are uniquely positioned to transform uncertainty from a problem into an opportunity. Pull strategy is ultimately designed to accelerate capability building by participants, helping them to learn as well as innovate, by pursuing trajectories of learning that are tailored to their specific needs.\textsuperscript{75}

Generate interest by focusing on what your clients want and what problems need to be solved. Give potential clients they can apply instead of information about credentials, or past clients. Pull platforms are particularly powerful in fostering innovation, learning and capability building. Push strategy is not used in innovation environments, since you cannot anticipate if you are going to innovate. Under uncertainty increases and competition intensifies, it turns out that pull strategy delivers more efficiency.\textsuperscript{76}

The distinction between pull and push models derive the marketing materials:\textsuperscript{77}

**Pull Tactics- “client” centered:**
- Begin with clear identification of the niche markets you work with;
- Lead with problems and concerns from clients;
- Use the above two elements to create a picture that your target market can identify with;
- Provide useful ideas that your target market can use and that demonstrates your expertise.

**Push Tactics- “self” centered:**
- Focus on you, your services and staff;
- Focus on glowing testimonials and your clients list.

The challenge is getting the emphasis and order right. The pull and push marketing sequence that works to move your business forward involves followings:
- Create resources that pull prospects to you and your firm;
- Get prospects to give you their contact information
- Push useful information out to self-selected prospects on a regular basis.

\textsuperscript{75} Richardson, W. (2005), Push vs. Pull Education, \textit{Emerging Technologies}
\textsuperscript{76} Hagel J. (2005)\textsuperscript{77} Cook C. (2005)
When prospects have a compelling need, they will turn to the firm that they have had regular communications with, know and trust. Some information also need provided such as detailed services, credentials and testimonials.  

3.3  **Strategic positioning**

The basic strategies we have chosen to use when looking up on how our case companies enact and respond to their environments are defenders and prospectors.\(^79\) A rich body of research was published in Miles and Snow’s (1978) initial contributions to the study of business-level strategies where they presented four strategies. We have chosen two of them since we believe that these two are the most suitable ones for this study. The reason for our choice is that we believe that companies either tries to prospect with the help of innovations or tries to defend them selves with help of them. Those strategies are mutually incompatible.\(^80\)

3.3.1  **Defenders**

Defenders have narrow market domains and a stable set of products and customers. Technological efficiency is central to the organizational performance. This type of organization is highly expert in the limited areas. They do not develop the new domain but devote to improve the efficiency of the locating.\(^81\)

A defender strategy typically involves finding, maintaining a secure and relatively stable market. Rather than being on the cutting edge of technological innovation, product development, and market dynamics, a defender tries to insulate themselves from changes wherever possible. In their attempt to secure this stable market they either keep prices low, keep advertising and other promotional costs low, engage in vertical integration, offer a limited range of products or offer better quality or service. Then tend to be slower in making decisions and will only commit to a change after extensive research and analysis.\(^82\)

The Defender’s control system tend to be centralized only top-level management have the necessary information and proper vantage point to control operation that span several

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\(^{78}\) Ibid


\(^{81}\) Miles & Snow (1978)

\(^{82}\) Walker, O & Ruekurt. R. (1987), Marketing’s role in the implementation of Business Strategies, *Journal of Marketing*
organizational subunits. Defenders normally restrict information flows to vertical channels: directive and instruction flow down the hierarchy and progress reports and explanations flow up. The Defender evaluates performance in efficiency terms (doing right things).\textsuperscript{83}

### 3.3.2 Prospectors

Prospectors focus on locating and exploiting new product and market opportunities. Technological flexibility permits a rapid response to a changing domain. It suits to maintain flexibility and effectiveness but cannot maximize efficiency in its production and distribution system. Prospectors also tend to be organized into product divisions.\textsuperscript{84}

A prospector strategy entails active programs to expand into new markets and stimulate new opportunities. New product development and obtaining additional market share with vigorously pursuing and attacking on competitors are the common ways prospector do. The respond quickly to any signs of market opportunity, and do so with little research or analysis. The risk of product failure or market rejection is high. Their market domain is constantly in flux as new opportunities arise and past product offerings atrophy. They value being “first mover advantage” in an industry is to provide them with premium pricing opportunities and high margins.\textsuperscript{85}

The Prospector’s control system is result-oriented. It means that it emphasizes outcome measures e.g. product’s acceptance by the market, rather than input measures such as the efficiency which resources were utilized (Defenders). Prospector’s effectiveness orientation requires the control system to be decentralized. This is because the information needed to assess current performance and to take appropriate corrective action is located in the operating units and not in the upper echelons of management. If prospector operating units are to exercise discretion effectively they need to have timely access to performance information. The prospector evaluates performance in effectiveness terms (doing the right things). Boundary-spanning positions such as marketing and product development are regarded as most crucial, and the importance of attached to these areas is reflected in both the reward system and in opportunities for promotion.\textsuperscript{86}

\textsuperscript{83} Ibid
\textsuperscript{84} Ibid
\textsuperscript{85} Walker, O & Ruekert, R (1987)
\textsuperscript{86} Walker, O & Ruekert, R (1987)
3.3.3 Defender vs. Prospector

As Miles and Snow (1978) defined defender and prospector, the distinct characters are expressed as follows:

**Defender:**
- Tries to locate and maintain the stable products or existing service areas.
- Provides relatively limited range of products or services compared to competitors.
- Attempts to secure the position by offering lower prices, higher quality, or better service than competitors.
- Ignores to create the advanced technological/new product development in its industry.

This strategy entails a decision not to aggressively pursue markets. As a result, they tend to none of the things prospectors do. Their goals tend to be efficiency oriented rather than effectiveness oriented. The industry tends to be mature with well defined technology, products, and market segments. Most sales tend to be repeat or replacement purchases.\(^{87}\)

**Prospector:**
- Values to be within a broad product-market domain that undergoes periodic redefinition.
- Stands at the forefront in a new-product and market areas, although some efforts are not proved successfully.
- Concerns to react the signals of opportunities, usually their rapid response lead to be the “first mover” in the industry areas.
- Competes primarily by stimulating and meeting new challenges, but might be at weak position when other competitors enter the market.\(^{88}\)

As prospector, a large proportion of their revenue comes from new products or new markets. They are often highly levered, sometimes with a substantial equity position held by venture capitalists. Price skimming is a common way of recapturing the cost of development. They can be opportunistic in headhunting key employees, both technical and managerial. Advertising, sales promotion, and personal selling costs are a high percentage of sales.

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\(^{88}\) Miles & Snow (1978)
Typically the firm will be structured with each strategic business unit having considerable autonomy. They industry that they operate in tends to be in the introduction or growth stage of its life cycle with few competitors and evolving technology.  

Hambrick (1983) explored how industry environment influenced the effectiveness of Miles and Snow’s strategic types and how these strategic types differed in their functional tendencies. It is stated that defenders and prospectors differed in their performance tendencies depending on the nature of the environment and the performance measured used. Defenders outperformed prospectors in terms of profitability and cash flow in every type of environment: growth, mature, non-innovative and innovative industries. Prospectors outperformed defenders in terms of market share gains, but only in innovative industries. In these industries, prospectors were rewarded for their adaptive stance. In non-innovative industries, prospectors cannot be rewarded for their adaptive stance and probably receive incurring low profits and cash flows.

Further, Smith et al. (1986) investigated Miles and Snow’s typology and its relationship with organizational size and organizational performance. They discovered that defenders performed better as small firms and prospectors performed better than defenders as medium to large firms.

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89 Boyd, H & Walker, O (1990)
4 Empirical Study

In this section we expressed the empirical data on two Swedish companies and two Chinese companies. The selected data are portrayed on innovation, marketing and strategy three aspects according to our frame of reference. And it is the foundation for the next part analysis as well as providing essential materials.

4.1 Swedish Case Company: Hörnell International AB

Interview with: John Danielsson, former (approx. between: 1983-2004) sales and marketing executive during the main part of the existence of Hörnell International AB in Gagnef Sweden. (All quotations in the text are translated from Swedish by the authors)

4.1.1 Innovation and the Company

The background on the innovation is that Åke Hörnell back in 1972 studied at Chalmers Technical University. One day Åke passed by a notice board the Swedish ship manufacturer Götaverken had a note with a suggestion on an exam-work for a student. This exam-work suggestion was about improving the protection for the welders at Götaverken against ultraviolet radiation (below called: UV) and infrared light (below called: IR) which is a nuisance problem when welding. This problem arises due to that when using welding helmets the welders need to position the welding electrode in right position before folding down the welding helmet with the protective and almost not transparent protective glass. This results in that some of the welding beam light by necessity gets in to the eyes of the welders when igniting the welding beam before folding down the helmet. This causes problems with their eyes especially after long time exposure and which may ultimately end up in severe eye problems and diseases.

Åke did his exam-work and came to realise that ideally welders should be able to fold down their helmets before positioning the electrode and there should be an automated function which protected the eyes. Ideally the eye protective glass in the helmet should be transparent when not welding but should within microseconds turn to almost not transparent when the welding beam was ignited. He started to make some experiments with photometric materials but also tested the technique with liquid crystal that had been developed at Kent University in Ohio, USA. He started to develop a helmet with the use of liquid crystal technique (sooner to be known as liquid crystal displays or LCD) by the same time as this technique was under
Innovative companies! Innovation, Marketing and Strategy

further development and was being used in more applications such as calculators and watches to give a few examples. He managed to get this technique to work quiet well and believed in it.

When he had finished his studies at the university (Åke Hörmell later was conferred an honorary doctor’s degree at Chalmers) he was for a while financed by ESAB, a company manufacturing welding gears and equipment on this project. But after a while ESAB wanted to divest this project due to marketing surveys showing that the product should be too expensive for the customers. This led to that Åke bought this project for a symbolic sum and started to work on it all by himself in a new started company in the beginning of the eighties, named Hörmell Elektrooptik (later renamed to Hörmell International), to develop this idea into a useful product prototype. The final product was a lamination consisting of layers with liquid crystals, UV and IR protection layers, but also with 2-3 polarization layers (our note: polarization is a technique for filtering away light beams of a special kind) all within a protective glass so they all were in a single filter. This resulted in a filter that was almost completely transparent when not hit by welding beams but that within a microsecond turned into a protective filter that stopped the extreme welding beam light and that also protected against other damaging light and radiation. The UV and IR part of the filter protected against hazardous radiation and light while the LCD part regulated the inflow from the visible (green and yellow) welding beam light into the welding helmet. This further development was being done under severe and hard economic pressure with loans from acquaintances and some financial investments and loans from a local investment/lending fund.

Sooner the company became the only manufacturer of liquid crystal displays in Sweden and one of the few in Europe. The most of the manufacturers of LCD technique came to be established within the USA in the seventies and in the beginning of the eighties but was after a couple of years outclassed by Asian low price manufacturers. In the beginning of the eighties Hörmell International started up its production of the trademark Speedglas welding helmets and began to market the product both in Sweden and abroad which resulted in some customers. Since it was a newly developed technology to make use of liquid crystals implemented in welding helmets did the company receive much attention through articles worldwide which also led to that customers started to contact the company.

But Hörmell was not the first company trying to apply this technology to welding helmets. There were several companies with similar product ideas but Hörmell was the first company to
Innovative companies! Innovation, Marketing and Strategy

commercialize the technology and to turn it into a usable well functioning welding helmet. This did that they managed to have high quality and competitive products on the market in opposition to the competitors whose products didn’t work properly and were so deficient so they finally failed. Even if the company had a lot of customers were there without any hesitation a lot of problems John says, but these problems also existed for our competitors and we learned a lot during the time we worked on these problems. After a while the company learned how to manufacture the Speedglas and this experience was especially important when it came to quality since the good quality that the company managed to develop was very difficult to copy. John talked about the problems with the development of the Speedglas technology due to tough and difficult environments at workshops but especially in tropical countries such as Australia where problems with the electronics could emerge, bubbles within the layers in the glass and so on often due to humid air.

After a while the company received an inquiry from SSAB in Domnarvet (Sweden) since they wanted to have some kind of protection against welding smoke in welding helmets. There already existed products with fans and filters that could be coupled to welding helmets blowing fresh air into them but the problem was that old welding helmets had to be folded up between welding operations and then smoke got into them. But with the Speedglas helmets you didn’t need to fold it up since it went transparent when stopping welding, so the company developed a seal between the skin and the helmet so there wouldn’t be any smoke that could penetrate into the helmet and they also developed a filtered fan that could be connected to the helmet supplying it with fresh air. This became a combination that grow almost more in the market than the helmet it self did John says and tells about the success of this combination and gives a log list of worldwide companies using their product.

During the ten to fourteen first years of the company’s life the most of the gross profit was reinvested within the company in machines, personnel, market investment et cetera since it was a complicated technique to manufacture. During the Swedish bank crises in the beginning of the nineties the company did have some problems but these were solved after a while with layoffs and other measures but also due to rapid growth in the market that the company experienced shortly after the bank crisis and after some additional years the company was economically very well performing. In the beginning of year 2004, the company was eventually bought-up by the worldwide company 3M which now owns the company and the
products. The main share holders and owners of the company at this stage were some investment firms and the innovators family.

4.1.2 Marketing of the Products

The marketing of the products were being done both by push and pull process according to John. The company had overhead advertisements but also visited the end customers especially during the first years. When marketing the product in the beginning it was sometimes difficult to get distributors interested in it since it was rather expensive so the company’s own marketing staff had to visit potential end-customers to let them take a look at it. John tells a story about how they did in Flint, USA, where they themselves went to General Motors and let the welders try-out the Speedglas helmets:

“*The welders most often became very delighted immediately, and then we went back to the distributors in the afternoon and said we’ve got a very large customer here, are you interested know then? Otherwise we will go to your neighbour…*”

So the company almost had to sell by themselves and then return with the orders to the distributors in the beginning. The company increased their sales within the United States whilst their competitors were holding on to the old conventional welding helmets. But after a while even American manufacturers of welding helmets started to show interest in the product and that was the start of co-operations with American firms and a higher competition that turned out to be prosperous for the company. This was the result of something that almost could be seen as a missionary mission in the beginning to sell the concept of a new technology that cost ten times as much as the older one as John said. In the beginning the company had difficulties reaching out to the customers even though there are always some individuals that want to test new technologies but then there are always those who don’t like to take chances because it’s too new says John. The company had several overhead advertisements to reach out to the customers and then received many inquiries but the problem was that they didn’t have any distributors in the beginning that could do follow-ups on the inquiries. But later the company had several thousand distributors in United States. After a while distributors started to contact them to ask if they could be distributors for the company and this was the result of the industrious work that were being done in the eighties and beginning of the nineties when establishing a daughter company in the United States. Sooner the company became to be extremely well-off within the United States.
The distribution was a key factor for the company since it was impossible to visit all the customers. The problem was that if there were several distributors in the same city they didn’t want to sell the same product but they wanted to hold alternatives so it was very difficult to obtain a hundred percent share amongst the distributors and the distributors were a critical part when reaching out to the market for the company and so much as ninety-nine and a half percent were sold through them.

Hörnell established daughter companies in several countries such as USA, England, Germany, Singapore, Canada, France, Italy, but in the beginning the company only had distributors on these markets. These daughter companies had several tasks that they were being responsible for and one of them was to market the products and to make sure that the distribution worked properly. Another responsibility was to segment the market and to make sure that there wasn’t any internal competition amongst local distributors. Some of the distributors sold to the auto industry whilst others would concentrate on other segments and branches and so on. In Sweden the company had several distributors that worked on different segments such as protective equipment, welding equipment, tools, but even hobbyists, so the distributors had their own market segments to work on. The company had after some time a big distributor network that finally was the key to the market.

The customers complained about the price but still kept on buying and after a while the company learned why the customers kept on buying despite the higher price, the reason was that the Speedglas helmets raised the productivity within customer companies. The company received recommendation letters from customers telling about increases of 30 to 40 percent on productivity. The reasons for this productivity increases was that the welders didn’t have to fold up their welding helmets between every weld but could change position on the electrode without any problem with the helmet folded down and then continue to work. Another reason for the increases was that the quality of the welding work itself became better since the positioning of the electrode was better already from the beginning which resulted in much less after treatment on welded parts. This meant that the payoff calculation on the Speedglas helmets was just a couple of days for many customer companies. Another benefit was also that the welders themselves got better protection and wasn’t sick as often as they had been earlier resulting in additional economical benefits for customer companies.
The marketing positioning was at the high end of the market with premium products and the clear aim and goal of the company was to be best on the market and expensive, even though John latter ads that:

“I might be exaggerating a bit but we wanted though to be best with the highest price”.

The company invested much money to strengthen their trademark Speedglas and according to John does the main part of the welders in the world today know what Speedglas is, but when it comes to number two in the market they are probably not being that aware he ads. John also highlights that being number one in the market is very important and that the trademark received a lot of attention and that they as a company got a lot for free due to this.

Hörnell was the first company on the market with a product that was being usable to the customers and with high quality. This was an advantage against the competitors and had an enormous value when marketing the products. John tells what he uses to say when talking to and holding guest lectures in front of students:

“Who was first flying over the Atlantic? I know it, you know it, but then I use to ask who number two was? Maybe you know it but I don’t”

He mentions that being first at the market is extremely important when marketing a product. And a most important ingredient was also to have fully satisfied customers so that they did come back when they needed to reinvest in equipment.

After a while there were some competitors because the product cost ten times as much as normal welding helmets did. Much of the marketing effort consisted of travelling around explaining to customers why they should spent so much more on their welding helmets. Despite problems in the beginning calculations did show that the company would be profitable in the end if they were able to raise their sales volume.

4.1.3 Strategy Used by the Company

The company segmented or categorized, or as John says they were pyramidal categorizing, their estimated twenty million customer market into three different segments: Professionals approximately five millions, Seldom users approximately twelve millions, and finally Hobby
users approximately three millions. Then there was yet another diversification of the market between industrialized countries and developing countries. The most interesting markets for the company were professional users in the industrialized countries and especially the North American and European markets were in focus whilst the competitors tried to sell on low price and focused mostly on markets where Hönnells weren’t that strong. The competitors tried with low prices to get into the same market as the Speedglas helmet were sold on but the customers quite fast realized that these competing products had inferior quality so they returned to the Speedglas helmets again, John said that:

“Our helmets held for maybe five years but the competitors products held at the best for five days up to five weeks.”

After a couple of years there were two to three competitors with acceptable or similar quality but they didn’t manage to get the same market share as Hönnell had which was approximately about forty percent in the end according to John.

The company had trademarked their product name Speedglas but was occasionally threatened by competitors using very similar names so they had to put down a lot of money to defend the trademark attacks from competitors. Most often did the company send letters through solicitors and lawyers with warnings to companies that were trying to copy their trademark and that cost a lot of money and later the company also used an additional legal registration on the products: protection of design$^{92}$.

The company held some patents, but though not on the liquid crystal technology since that wasn’t the company’s own technology, but on the technology for combining liquid crystals with protective filters such as UV and IR. According to John patents haven’t had that much importance since techniques for combining liquid crystals with protective filters can be done or implemented in several different ways. But the patents though have had some value to the company since they optimized their combination of liquid crystal technology with filters and used the patents as protection against competitors so they could not copy the product. John mentions that it is really important to combine these different parts the right way since the welding environment is often very tough and hard with heat, radiation, hits, dust and so on.

$^{92}$ This is in Swedish called: Mönsterskydd
The competitors with similar products had low prices and deficient quality and their helmets broke within weeks whilst the Speedglas helmets held for years according to John.

But the company itself also received a threat on legal actions from a company in the United States but this ended up in reconciliation between the both companies where Hörnell finally bought the patent from the other American company even though the first ambition was to receive a license to use it. Afterwards this patent showed not to be useful to the company since it wasn’t similar with the technology used by them even though the former patent holder insisted it was and had threatened with a lawsuit in the court. But approximately a year after that the company had bought this patent a Swedish manufacturer launched a product and started to sell it in the United State but that were using a technology that could be seen as covered and protected within this patent. This ended up with that the other company had to pay licence fee to the company. But patent intrusion was not that usual and occurring as trademark intrusions were.

4.2 Swedish Case Company: Log Max AB

Interview with: John Danielsson, market responsible/marketing executive since 2005 at Log Max AB in Grangärde, Sweden.

(All interviewee quotations are translated from Swedish by the authors)

4.2.1 The Company and Its Products

The company manufactures logging equipment and their main products is harvesting heads. On their homepage at the internet the company writes:

“Since 1988 our main product line has been grapple harvesters, also called single grip harvesters. Such a device will grip a tree, fell it, delimb it and cut it to desired lengths”

A harvesting head unit can also be described as a devise that is mounted on a logging machine and that is used for cutting down trees but that also cuts away branches and cuts the trees in convenient lengths so they can be loaded on trucks without any additional processing.

93 www.logmax.com (access: 051212)
Earlier logging was until the end of the seventies being done with the help of chainsaws and consisted of much manual work. But in the beginning of the eighties some tries were being done to automate the logging process and Log Max entered the market in the middle of the eighties but under a different name: Grangärde maskin, that worked with improvements and modernization of existing logging products. The company haven’t invented the harvesting head but saw possibilities to improve and develop the logging industry together with some other companies but that latter became its competitors. The harvesting heads were quite primitive in the beginning so there were many possibilities for improvements and further development of them.

Today the company holds different patents in several countries on innovative improvements that they have done on harvesting heads such as; Delimbing unit (a devise for steering the branch cutting tool), a Feedroller called Flex-Drive (a devise for feeding the timber in the harvesting head) and a Cushioned bottomplate.\textsuperscript{94} The company has developed the product gradually in competition with other companies.

Log Max has focused on the harvesting heads whilst their competitors have chosen to manufacture not only the harvesting heads but the whole logging machines. This has resulted in that Log Max has been able to concentrate on and to put a lot of effort at improving and developing the harvesting heads while the competitors not have had that in focus. By that reason Log Max products today in comparison to their competitors have less hydraulic hoses sticking out from them, since they are much more built-in within the harvesting heads. This also means that the harvesting heads are much more protected against damages and Log Max has chosen to built in quality in the harvesting heads whilst the competitors has chosen to put down their efforts on building the whole machines.

The company has during the last fifteen to twenty years focused on developing the markets most efficient harvesting heads with high quality and long life expectancy with high reliability. The products are amongst the most expensive there is on the market but John expresses that it is: “value for money”.

\textsuperscript{94} Some of the patents held by the company were being checked up on the company’s homepage after the interview at www.logmax.com (access: 051212)
During the years the company have had to convince customers about that they should shift the existing harvesting heads on the competitors logging machines into Log Max’s instead. The competitors logging machines already are equipped with mounted harvesting heads so Log Max has to “sell in” their products and try to convince operators (i.e. end-users) that it is better than the originally mounted harvesting head. An opening possibility to do this is when the harvesting head is being replaced since normally does a logging machine have a life time that is three times as long as the harvesting head has. To be able to do this one must also install what John calls a *black box*, which is a device that makes the steering between the harvesting head and the machine compatible so that the logging machine can handle and steer Log Max’s harvesting head since every machine manufacturer uses different steering technologies on their harvesting heads but this is also how the company has been successful.

About approximately two years ago the company bought Caterpillars manufacturing in Söderhamn, Sweden, of harvesting machines (above called logging machines) through its daughter company Eco-log. By that the company today has, as John expresses it: “a whole complete machine”. And this is a big investment or rather a business stake (this is our translation or rather interpretation of the Swedish word: Satsning) since now the daughter company is much bigger than the mother company.

There are many competitors in this industry but the reason why Log Max is at the top, as John expresses it, is that Log Max has focused on the Harvesting head unit. There are also some manufacturers that sometimes have to buy harvesting heads units from Log Max because the operator (i.e. end-user) is demanding a Log Max head on the harvester, and this is called OEM-customers (Original Equipment Manufacturer; which is a manufacturer who buys a part from another manufacturer). The reason for this is that a company maybe not is able to both built machines and develop harvesting head units.

The competitive advantage that the company has according to John is quality, performance characteristics and reliability, this since a logging machine is very expensive to run so the operators of them want them to run as much as possible without any interruptions due to service and maintenance. By this reason the company also has developed a very good service organization with almost 24-hours a day telephone service since the logging machines runs in

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This box has to be electronically programmed and differs for every machine manufacturer.
shifts 24-hours a day. The company also has service personnel that educate resellers so they can turn out in case of problems with a harvesting head unit. The reliability is also the reason why Log Max has chosen to build-in the hydraulic hoses so there won’t be any easy damages to the units.

The features and benefits that can be found on the company’s products are amongst others: “All Log Max heads features a patented top knife positioning sensor to minimize friction losses and improve feeding efficiency. The sensor controls deliming arm position around the tree without pressing it against the back of the head. Eliminating friction between tree and head improves deliming power and performance.” But also a high pulling force as due to the patent mentioned above. Another feature is that: “The Log Max design keeps load paths short helping to save weight. A patented bottom plate with rubber dampers absorbs energy from heavy external shocks, reducing risk of deforming the saw box.” and “Feed roller geometry mechanical advantage constantly centres the tree in the head directly over the measuring wheel for accurate measuring. This geometry also automatically reduces feed roller arm grip on the tree as the diameter gets smaller reducing fiber damage in smaller wood.” Log max also highlights how easy it is to maintain their products.96

The values that the company’s products and innovations have to offer the customers are especially the high quality of the product which John classifies as “Sustainable competitive advantage”. And that is something that is difficult for the competitors to copy and he also consider this as being an outstanding added value to the products.

There are two main concepts of how to fell or cut down trees and the company works with the one that is called mechanized logging whilst the other is manual logging. Log Max has together with some other companies been in the front of a modern method/concept called **CTL** (Cut to length) were trees are cut into pieces of convenient lengths and are being partly processed in the logging machine (with the help of a harvesting head unit), whilst some other companies works with the method/concept of **full-tree**, that are especially common in the United States, were trees are cut down and handled in whole lengths and then are being dragged up to the forest roads and loaded on trucks. The method/concept of CTL is more environmental friendly according to the company since the tress doesn’t need to be dragged

96 All these quotations are copied from Log Max homepage: www.logmax.com (access: 051212)
through the forest and there are also rationally operational benefits, but the method chosen also depends on the forest environment so there is no single best method to be used at every occasion. Some of the competitors manufacture machines for both methods/concepts and this also requires different harvesting heads, with the CTL method the harvesting head must be able to do many things whilst in the full-tree method it’s enough to just cut the trees down, but this also means that the harvesting heads units looks very different between the methods. Log Max is being at the top in CTL with very well developed and modern harvesting heads units according to John, who also mentions that the method is growing worldwide, but that at the same time is the logging industry rather conservative so in America there it’s not easy to win attention to the method. Since the logging and forestry industry is rather conservative the customers aren’t that willingly to change their methods (and by that neither there machines) and they are often also being attended and visited by their manufacturer of the machines and often customers are being supplied with clothing and other stuff from the manufacturers.

When speaking about the high quality of Log Max products the service is according to John utterly most important to be good at since even if having a high quality the users behaves so differently. Some customers maintain there machines very well whilst others runs them until they brake so the company has worked on becoming well known at the market for having very good service features and that is also to be considered as a value added to the product says John. The customers that the company has don’t differ from what other companies have and what is most important, as John expresses:

“... Is about having a very good relation to the customers and to gain access and then maintain the relation and to give good service so they are being satisfied”.

One way to convince customers of that they should exchange their present harvesting head unit is to let them use Log Max’s unit and then ask them to measure over a longer period of time how much they have been able to harvest with Log Max product in comparison with the other competitor unit. This is easy done since the machines records everything being done in a computer unit, and Log Max is at the end usually in top according to John. This is a good way to get an opportunity to convince users that they should exchange their present harvesting unit, especially if they can see that they can earn money on it.
4.2.2 Marketing of the Products

The company introduced new products at exhibitions and fairs and John gave an example of how they introduced a new product at a logging/forestry exhibition at Elmia in Jönköping Sweden is a worldwide very well known exhibit amongst logging companies through out the world. The company received many inquiries from customers and abroad distributors also showed great interest for the introduced product. At this exhibition the company also for the first time introduced its new daughter company Eco-log. At exhibitions as Elmia companies could show their products and how they worked in real life since there was logging areas prepared for the exhibition and the case company had drivers/operators who were especially trained and educated to show at exhibitions how the products work. John mentioned that it was important to impress the customers at these exhibitions.

Otherwise products were marketed in some extent through advertisements and customer visited. Since the customers especially in Sweden wouldn’t be many possible to visit them and to make use of a more personal marketing. But distributors were also important since the company sold directly to the end customers in Sweden but relied on the distributors, or as the company called them: Service providers\(^\text{97}\), for service on the products.

The company has several daughter companies abroad that are responsible for their own markets. In the biggest and most important market the United States do they have two daughter companies, whilst they in Canada have a very close relationship with a distributor. In Australia there is a company who uses the name Log Max but this name is only borrowed since the company is a distributor. The company has recently established a daughter company in Russia but the main part of the rest of the world is covered by distributors as in Brazil where is a potential giant market. But the Swedish market is very important for the company especially since the Swedish market is considered as being in the front of mechanized logging and foresting but that is also due to companies as Log Max according to John.

According to John it is more or less almost as a missionary mission to sell and market a new method and a new concept of how to do things as for instance with the CTL method and to gain the customers acceptance for this new method and concept especially amongst customer

\(^{97}\) This is our translation of the Swedish word: servicelämnare
being used to work with the full-tree method. But the markets in Sweden and Finland can be considered as being the forefront runners when it comes to working with this new method.

The markets for the products seem to be increasing especially John believes that the South American and Russian market will be very important in the future. Since those markets hold enormous forests assets and the mechanization of the logging and foresting industry in those markets aren’t even nearly as developed as those in the Scandinavian market. The reason why these markets will increase in importance is as John thinks that those markets will emerge and takeover industries such as paper manufacturing. Another possibility seen on a very long time future schedule is the Asian market but at the present time being the company does not have any business there. The Scandinavian countries will instead decrease in importance since it is already much mechanized at this point so the company just have to concentrate on holding its position on these markets but faces probably no possibilities to grow within them.

John believes that the company might have to change the marketing strategies when they enter deeper into the South American and especially the Russian market since they are different from the western markets that the company now mainly has been working on. To establish a company in Russia is not as easy as it is in western countries. Western markets are functioning as John puts it and they do business in a way that we are accustomed and used to but when you enter into Russia or South America you’re in an unfamiliar terrain John says, with a lot of problems that we don’t meet in west as trade customs or how to solve the service when there aren’t anyone that are educated. And in some countries one almost have to build roads at the same time as you sell harvesting heads says John.

The most problems that the company has faced so far when marketing new products is mostly of a technical nature and John mentions an example of how there can be differences and difficulties when measuring trees of another kind than the company is being used to work with as for instance eucalyptus trees that differs against trees in northern part of the world. But these problems are somehow solved with technical development and adjustments on the crucial parts and technical difficulties one have to account for when introducing new products John says.
4.2.3 The Company’s Strategy

To be able to grow the company enters into new markets and when doing this it is important to have a reference product in that market and to obtain that one has to be willingly to make compromises on the price to get someone to test the product. But it is also important to educate and to have a service function in place since the customers should not face the risk of being standing there without any service if anything happens, because if that happens the company faces the risk of a bad reputation.

It is also important to find a distributor with good financial resources since the products are rather expensive. A good distributor is very important because if one wants the sales to start and speed up the distributor should not be the one that prevents that from happening explains John and adds that this is sometimes the case.

To be in place and to help customers at new markets are important since the products often must be adjusted to fit different customers and their forests since there are different trees in different countries. So it is necessary to help and to show the customers how they should do to program the computerized steering of the harvesting head units and so on. Building up a confidence on and within the market and to show that the company has a good service organization is important when establishing the company’s products in a new market. The company also in advance tries to check up the grade of mechanization in the logging industry before deciding on entering into a market.

The company has tried to position itself as a high-end premium company with expensive products with high quality but the company isn’t the most expensive but almost. There is one main competitor within the same position on the market.

The company is very successful at the market and earns a good profit and has recently been appointed for and has received a price for being one of the most successful exporting companies in Sweden.

The Swedish market is very important for the company since they can learn from it and also uses it as a test market were the company can get fast feedback on new products. It is of a great value to be in Sweden for the company since they can easily get out to the market and speaks the language and understands everything and can get a fast feedback on problems with
new products from the users and can get the products tested by loyal co-workers. At the Swedish market they have what they call Log Max ambassadors who are customers and users speaking very well about the company and its products and the company also tries to obtain such ambassadors abroad.

They main methods that the company uses to defend itself against competing companies are that they are striving to obtain and hold a good rumour about the quality and the performance characteristics and reliability that the products has to offer. The above mentioned ambassadors are also very important because it’s of an extreme value to have machine drivers that tell others about how well the products of the company work. To be present at the market were the customers are and to give them service and support and to perform repairs fast is crucial to the company to preserve its position and to fulfil the strategy. But this requires a quite big organization and is rather expensive and demands strengths within the company.

4.3 Chinese Case Company: Xerxes

In this part we portray the innovation company Xerxes in China. The respondent is the president and he is one of the founders in Xerxes. Nowadays Xerxes has been growing in skill and scope and inventing more than 100 patent products. In our case, we only focused on the first invented product-USB Flash Driver.

4.3.1 Company Presentation

Xerxes Technology Co., Ltd is one of the largest solution suppliers, manufacturers and R&D powerhouses in Mobile Storage, Wireless Data and Digital Entertainment products in the world. Xerxes’ headquarter is located in Shenzhen, China. The company was founded in May, 1990 by two return Chinese students abroad. The turnover for 2003 was about 500 million CNY and the company have about 400 employees.98

4.3.2 Innovation in Xerxes

Xerxes released the first USB Flash driver in the industry and started the leadership in the USB driver market in Nov. 1999. After this innovation, files, programs, music, pictures and etc. can be easily transferred at home, office and school with PLUG, CLICK and GO. Since

98 Xerxes Annual Report, 2003
1999, Xerxes has introduced and developed average fifty new products to market annually. Up to now, over 250 patents have been approved or are pending around the world. Among these more than 100 patents are innovation patents.

As the president of Xerxes Mr. Deng said that abroad study and overseas work provide him a wider visual field. Upon the jobs’ needs, Mr. Deng often needed to save a copy of the data from his laptop to the desk computer or exchanged the big file or program with other computers. At that time he had to compress or divide the file then switch to the floppy disk. Slowness and inconvenience of the documents exchanges between laptop and other computer puzzled him. During his work in Singapore, due to the tropic ocean climate, the floppy disk often ran of order under the humid weather. The problem of the restricted contents was hardly to conquer as well. The removal hard disk is too big and the span life is not long. What product can connect and transfer information efficiently? From then the thought of “removal memorizer” has appeared in his mind. Then and there the “removal memorizer” didn’t exist in the world, is it possible to invent, develop and produce the product? And he also felt the troubles with carrying the hulking floppy driver on his travel, so he got some elicitation from the problem as well. Is there a new product which can substitute the floppy disk and avoid these shortcomings? Once he had this idea, he realized it should be a great opportunity. The whole computer from the mainboard, CPU to keyboard and mouth, every part has been changing and renewing constantly except the floppy drive had been keeping its pertinacity with the standard collocation. A bran-new product should be discovered and replaced the behindhand floppy driver.

Xerxes were started by two people Mr. Deng software engineer and his friend Mr. Cheng hardware engineer. They have so many common grounds and perfect knowledge combination, so they walk together for their career. At the end of 1998, they started to work on settling the inconvenience of floppy disk and floppy driver to investigate a small, stable, easy to use and huge capability removal memorizer. For the sake of the USB flash driver innovation, Mr. Deng and Mr. Cheng had been working at home for almost half a year. During the time they wore out four computers, but they succeeded to invent this USB flash driver at the end.

After the new product was invented, they needed investment about CNY 3 million. They had looked for some famous IT companies to finance and hoped them to develop and extend this product with them together. But this technology is really too modern, hence non company
could imagine its expansive marketing foreground. They negotiated with so many companies, unfortunately they were refused. They convinced somebody would realize the new product’s value. Finally they got the first venture investment CNY 3 million from Singapore. After that, they continued to research, produce and market the USB flash driver and they also recruited more than ten capable engineers. Subsequently more and more people and companies would inject investment to Xerxes. One of the companies invested CNY 30 million. When Mr. Deng recalled the beginning time, he said that only persist and stability can achieve the ultimate victory.

In fact, Mr. Deng never doubted the value of floppy disk or driver. He convinced that this USB flash driver could convenient people more and it would obtain presence in the market. 30% of the employees in Xerxes work for R&D which is the core of the company. Some of them have studied at abroad; some of them are senior experts on IT. From 1999 only two people Mr. Deng and Mr. Cheng invented the USB flash driver but nowadays Xerxes has an efficient R&D team. They encourage their employees to be innovative and they have systematic rules. An innovation can be dealt with at a top-level meeting within three days. And they have bonuses for inventors, said by Mr. Deng. So far the success rate is approximately 50%. In other hand, half of the employees’ proposals became the reality and the products were applied for the patents. It is costly to carry out these strategies. Usually only about two or three products out of every 10 research projects can be put on the market. It might not only waste a lot of time, but also incur millions in losses. Xerxes invests more than 50 million CNY on R&D every year, which excludes the patent application fees and maintenance expenses. Mr. Deng believes without resolution, IPR strategies would only be a useless slogan. Recently a specialist joined in Xerxes and became the executive CMOS chip stylist. Mr. Cheng the vice president is a technology superior Mr. Deng has strong technology background as well. The investment on R&D in Xerxes is high up to nearly CNY100 million every year. At present Xerxes company has eight series and more than 100 kinds of products under three main categories which consist of several worldwide advanced technologies. It took Xerxes four years to grow into a company with more than 400 employees and millions of CNY in revenue.

4.3.3 Marketing of the New Product

Xerxes’ product USB flash driver faced a completely new market. The product has thumb size and only 20g weight but with a capacity equivalent as many pieces of floppy disks. For
customers it is extremely amazing even unbelievable. Mr. Deng brought up his “Horse Nose theory”. It is described as “In a horse race, many horses run at close speed. Especially the distance difference between the first and second horse arriving at the destination is only like the length of horse nose. However, this tiny distance determines the ultimate victory or defeat. Xerxes has unique advantages in the relevant technology terrain. The merit makes Xerxes attain the final triumph.

At the started marketing they chose to put advertising on websites and shop online to gain the prevalence among consumers. At that time Xerxes not only needed to sell the products, but also it’s necessary to increase the prestige of the company. According to the conversation with Mr. Deng, at the beginning they acted as a teacher. As an exploiter in this industry, Mr. Deng felt Xerxes had the responsibility to learn customers and foster the market. They tried to introduce the product and let people know and accept it. Xerxes insist that this is a good product and it can solve clients’ big problem, so it will gain a broad prospect. Xerxes had spent one and a half year to make advertising, release news and conduct promotion activities to penetrate the markets. Xerxes provided the testing products to teach people how to use it therefore the customers could know, try out and under take the USB flash driver.

Meanwhile on advertising Xerxes developed the market through agents. USB flash Driver was a completely advanced product in the market. And the price was rather high, even if Xerxes owned independent knowledge patent, the reputation was still too low. Under this situation, big agents didn’t like to accept products with high price even not sure if customers would accept the products. Xerxes had to choose small agents with good potential. During 3 months, Xerxes developed more than 40 small agents. Some agents couldn’t imagine the future market on the USB flash driver, so they only would like to have a few pieces for testing. However, Xerxes still sent the samples by express. At the end of 2000, from the feedback of the agents Xerxes noticed the prices were too high to achieve big consumption. In order to protect agents’ benefit, Xerxes focused on some industry customers and gifts segments with low price sensitive. Xerxes continued to supplied necessary training for the agents, meanwhile they increased the research power and reduce the prices. In May 2001, Xerxes was introduced to UK market through a local company. Xerxes’ brand and its products are getting more and more popular even in Amazon.com.uk.
Xerxes had advertising on selected some IT professional websites and media. The majority of people had no idea about USB flash driver, so Xerxes had to show consumers with comparing the new product with the normal floppy disk.

Since the USB flash driver was a breakthrough product, there were no strong rivals on the market. According to JSB Research, in 2003 Xerxes covered 50.06% of market share in China. In Jan. 2003, Xerxes was awarded the ISO 9001:2000 Certificate from the Sweden SGS Group (SGS). Based on “computer newspaper” research, Xerxes gained No. 1 market share in China market in 2004. Xerxes increased the management efficiency and quality, cut the lead time of order with the fully operation of ERPP, powered by SAP. ISO 9001 certified and ERP powered by SAP and huge production capacity, Xerxes’ products enjoy the top quality reputation in the world and Xerxes is selected as a supplier of industry leaders. Up to 20-30% of the products are for export. Presently Xerxes has already cooperated with IBM, Dell, Samsung, Toshiba etc. global companies.

IT is a rapid developing industry, similar products presented to the market quickly. When one industry seems profitable, it will never find itself lacking in competitors. However, there were not just competitors for Xerxes. The standard of USB flash driver hasn’t been established, some other imitated products appeared on the market. Most of manufacturers have no sufficient technology reservoir, so price fight is the most hackneyed method to maximize the market share. Xerxes injected huge investment on advertising to penetrate the market and keep loyal customers. Xerxes also keep their distribution channels well ordered. Xerxes organizes agents meeting regularly. They divided into 7 distribution regions and they will perfect the intensive cultivation.

4.3.4 Strategy of Xerxes

In order to meet ever-changing market requirements, Xerxes has developed the widest product lines in the industry, including Mobile Storage series, Digital Entertainment series and Wireless Data etc. “Do anything anywhere” is Xerxes’ logo. The managing idea of “leading brand, continuing innovation” not only guided the developing trend of USB flash driver, but also successful in Xerxes’ three products divisions. Xerxes Company’s culture “learning, thinking and inventing” has been inspiring Xerxes people to pursue technology innovation, independent knowledge patent and core competitive product for further establishing the

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leading position on Xerxes’ three division industries. "We want to be a permanent pacemaker in this industry, and a competitive international corporation with strong innovation capability," said Deng. "We don't have time to look around...our goal is far ahead."

In order to lead the market in this field, from the beginning Xerxes recognized quality as the only way company grows and thrives. With world level quality control from R&D, Testing, Procurement, Production, Inspection and Service Xerxes is known as "Top Quality USB Flash Driver manufacturer in the world". In order to achieve win-win success in this fast-growing industry, Xerxes pursues OEM or ODM relationship and distributorship with innovative parties and strategic partnership with leading companies in various lines. With the accumulated expertise and versatile service unit, totally development of product upon customers' requirement, ODM/OEM services are provided to the customers around the world.

The given name OnlyDisk is one of the first USB flash disks in the world. The USB flash driver is a compact and easy-to use device which has similarity of operation process as computer hard driver. The revolutionary digital entertainment devices combine Xerxes’ patented Ultra-Stable technology and USB Flash Driver with digital technology to bring you a fashionable digital world. Xerxes Technology provides unique and comprehensive wireless networking products, services, and system solutions around the world. As a manufacturer wireless modem, routers and network cards, Xerxes also provides Hot-Point networking, wireless networking for corporation and SOHO application/solution for desktop and notebook for home or corporate LAN.

During only three years from 1999 to 2002, Xerxes had amazing development with turnover from Zero to CNY250 million, two people to a team with 400 people, nobody invested their innovation to over 50% domestic market share and exported to more than 100 countries. At the initial stage of Xerxes, Mr. Deng put forward three strategies: Intellectual Property Right strategy, Human Resources strategy and Internationalization strategy. Xerxes would be a time-honoured company instead of a transitory star company. That means Xerxes need an enterprising team that maintains lifelong learning, said Deng. Xerxes provides every employee with heaps of opportunities. They listen to what he or she says first, and then observe what he or she does. Finally they'll turn to the result of his or her actions. Although Xerxes grows fast, it will face many challenges and intensive competition in the future.
“The third-rate enterprise sells work, the second-rank enterprise sells product, the first-class enterprise sells brand and the over topping enterprise sells standard”, as described by one of the founder of Xerxes Mr. Cheng. Until 2003 Xerxes had accumulated to invest more than CNY 100 million on R&D. Continuously Xerxes has developed the first USB flash driver, GSM/GPRS wireless internet connection and other advanced products. Even Xerxes standardized the USB flash driver’s collocation to realize the cooperation with IBM, Dell those well-known international products.

Xerxes has many on-the-job training programs, such as Harvard Online and University Series. Xerxes also invests vast expenses on employees’ self-help study. They want to hone their employees' abilities and keep them updated in the fast-changing industry. This is the meaning of Xerxes to its employees. The market of USB flash driver has been keeping increasing, besides they have been developing new products. Xerxes positioned itself to be the pioneer and leader of the removal memorizer and wireless data communication. In this IT field, in order to implement the variety of industry, Xerxes has established its own chain-core technology, CMOS chip, product and distribution. Xerxes has invested return student study abroad research centre and CMOS chip laboratory recently.

Xerxes’ products covered more than 50% of market share domestically. And their products are exported to USA, Canada, Europe, Middle East, Japan and South Asia etc. more than 100 countries and districts worldwide. Xerxes is also ranked the biggest supplier and exporter for removal storage products in China. Xerxes is planning to set up research organization in United States, Singapore, India, Beijing and Shanghai constantly.

4.4 Chinese Case Company: ZTE

We did our research on another Chinese company ZTE to support our thesis. ZTE operates in a big scope but we only studied GoTa section. The respondent is the marketing manager in ZTE and responsible for GoTa program. She wanted to be anonymous, so the respondent’s name Wang is fictitious.
4.4.1 Corporate Profile

ZTE is the pioneer of China’s telecommunications equipment manufacturing industry, and a comprehensive provider of telecommunications equipment, mobile terminals and services. ZTE was founded in 1985 and it is headquartered in Shenzhen, China. In 2004, ZTE recorded the contract sales of approximately USD 4,111 million (CNY 34 billion) and turnover is CNY 21,220.1 million and the company has 21,000 employees.

4.4.2 Innovation of ZTE

ZTE is one of the major high-tech enterprises involved in the China Torch Program and an experimental company for technology innovation. On the basis of its strong CDMA technology and brand, in Mar. 2004 ZTE officially rolled out the first global digital trunking architecture standard – GoTa (Global open Trunking architecture) with independent IPR (Intellectual Property Right), which is the first proposed by a Chinese enterprise. Since then GoTa was handled by an independent branch as part of ZTE. ZTE has become the first to achieve the patent authorization of Chinese telecommunications enterprises to other internationally renowned vendors. The GoTa products have entered dozens of countries, including Malaysia, Norway, and Russia. GoTa is expected to become one of the leading technologies that may change the pattern of the international digital trunking market in the future.

The private mobile communications were developed from early point-to-point half-duplex mobile interphones to the present multi-channel and multi-BS trunking communications system, capable of providing voice and various non-voice services. The technology adopted was also evolved from the early analogue to the current digital. However, many organizations require an effective and reliable private communications system to find people on scene, arrange vehicles and discuss solutions efficiently, such as first-aid Dispatching, law enforcement agencies and government departments and Transportation and Logistics. Some important conferences require perfect dispatching functions, maximum security, quick sequencing, channel sharing and good voice quality.

According to Mrs. Wang the marketing manager responsible for GoTa system in ZTE, there are 1.7 billion mobile phone customers in the world and CDMA occupied 18% or so of the

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market share. The huge market cannot be ignored, that’s one of the reason ZTE invented GoTa system. And for China, GoTa would break the current monopoly dominated by foreign vendors with this type of technology offering, while ZTE also saw great potential in the fast-growing international markets.

In 2002, ZTE organized its R&D institutes at home and abroad to conduct research on new trunking technology and put forward the concept of GoTa digital trunking system. Early 2003 ZTE officially put forward the technical scheme of GoTa digital trunking, and began to develop system products for commercial use. ZTE established a GoTa subsidiary to recruit talents and R&D teams of international competence to join in the development of GoTa trunking terminals. For the internal confirmation of patents, ZTE sticks to the synchronization of application and R&D by conducting in-depth analysis, comprehensive balancing and overall planning before making final confirmation, thereby greatly eliminating the application randomicity and resource wastes.

ZTE consistently hold "Customer Focus" as the guiding rule in quality management. Since early 2003, ZTE has been cooperating with China Tietong Telecom, China Satcom and other telecommunication companies carrier on related technical tests to bring GoTa technology into national standards as soon as possible and promote the industrialization of China’s home-made trunking products. 103

This is a product that the world’s public mobile radio market has been waiting for. Unlike conventional mobile communications systems, trunking communications systems feature push-to-talk connection by pressing the PTT button. It provides fast connection and the called party can receive the call without the need of picking up the phone. Also, the system supports group call service.

4.4.3 Marketing in ZTE

“To focus on our customers’ market challenges and needs by providing excellent communications network solutions and services” is ZTE’s mission.

The characteristics of telecommunication industry and ZTE’s technology and products determine the specializations and particularity of the marketing. As the international telecom

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network solutions provider, ZTE offers telecom system equipment, engineering installation, network maintenance, service development, technology support and training for network operators. ZTE provides timely and efficient services for customers home and abroad through domestic and overseas marketing & engineering network with the support from R&D, project planning departments of ZTE. They offer support for clients through cooperation agency, engineering contract, network optimization and financing service etc. ZTE website and engineering support website are approaches for customers to acquire information.

At the beginning ZTE only cooperated with two domestic agents China Tietong and China Satcom. ZTE’s conventional system had small presence in China, because not only the system is expensive to purchase but the end customers also bear high costs. GoTa system’s price is more or less the same as the original CDMA system, and the end part’s cost is no much difference as mobile phone. After the successful cooperation ZTE showed their capacity on it. Continuously ZTE provided products and services to the 10th National Game and some prestigious conferences.

In Mar. 2004 the CDMA and GoTa network built by ZTE for the Russian operator KCC was officially put into operation, which is the first commercial GoTa network worldwide. Jun. 2004 ZTE worked with terminal manufacturers such as Southern High-Tech, Guanri Communication, Qingnian Network and Hengxin, promoting terminal product series ready for commercial application. Jun. 2004, ZTE GoTa system began technical cooperation with Nortel, Lucent and Ericsson. Nortel released its trial system that has passed IOT test.104

In addition to market expansion in developing countries, ZTE have penetrated the market of developed countries. ZET’s target markets such as Russia, India, Pakistan, Malaysia, Sri Lanka, Brazil, Egypt, and so on have become the company's major sales bases and helped market expansion. Meanwhile, they are progressing vigorously in the markets of developed countries. ZTE has established 15 regional marketing consulting organizations in Europe and occupied the market shares in England, France, Germany and some West European countries. Their products also entered into Norway and have selected by world-renowned operators such as Ericsson, Lucent and Nortel. ZTE has built a global service platform that helps ZTE work closely with customers and respond faster to customer requirements. This improves customer

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satisfaction and supports market expansion in all countries. ZTE have set up 40 branch offices and their products and services have been deployed in 70 countries around the world.

ZTE adopt other channels to obtain the prestige of the company and brand such like school, magazine, global customer service center, exhibition etc. With years of practical experience, ZTE University has developed into a multilateral technical and management training facility which providing passive training contracts to aggressively and actively serving users in as many ways as possible. Training scope has also expanded from domestic and global up to 50,000 users including more than 3000 foreign clients from 20 countries. ZTE releases news timely in their own magazines and homepage and discloses information at relevant journals. Global customer service centers facilitate customers and also help ZTE to get the consumption trend in time. Exhibition is also an effective way to meet potential customers and increase awareness of the company.

4.4.4 Strategy of ZTE

Internationalization of ZTE stands for the internationalization of market, talents and capital. Implementation of internationalization strategy is the basis for ZTE's continuous development. From 1995, ZTE started its internationalization strategy and became the pattern of entering into foreign market for Chinese high-tech enterprises. During the continuous ten years, ZTE underwent four periods:

- **Exploring abroad period (1995-1997):** ZTE started to set up local offices in certain countries and comprehended the international market movement rules.
- **Scope breach period (1998-2001):** ZTE entered into several countries in south Asia and Africa and ZTE’s international markets carried out from “point” to “side”.
- **Entire boost period (2002-2004):** In succession ZTE came into India, Russia, Brazil and other markets with great potential and numerous populations. **High Breakthrough period (2005-present):** ZTE adopted localization to cooperate with global agents to realize the entirely breakthrough on West Europe and North American markets. In Nov. 2004 ZTE GoTa landed in North Europe for the first time, working with the Norwegian operator Nordisk to launch a GoTa pilot project. Number launch began in September 2005.

GoTa technology offers several advantages over conventional trunking communications:
• Advanced technology - employing 3G wireless technology and advanced system structure to bring new space for service development of trunking technology
• Feature-rich services - capitalizing on the combination of trunking service and value-added services to attract large amounts of users to access the network
• Less investment and more cost-effectiveness

In addition to trunking service, GoTa can provide new value-added services such as SMS, LBS, VPN. These services are combined to offer integrated services to group users. ZTE has also launched its own commercial GoTa trunking terminals to operate promotion on this system, and will continually roll out series of terminal products including vehicle-mounted and professional terminals. ZTE has consecutively generalized new products and services to the market including the GoTa trunking communications system, the encrypted communications system and GSM1X.

ZTE’s advanced all-IP based CDMA 3G products are characterized by industry-leading performance, the highest integration, the largest capacity and the most flexible networking modes. With its rich network construction experience, professional and customized services, ZTE has more than 12 million lines of its CDMA equipment widely deployed in over 40 countries, and has become the largest CDMA equipment supplier in China.

“Targeting at quality instead of quantity and being guided by the market", ZTE is pleased to share its wisdom and strengths in the telecommunications field with the world. ZTE has experts working on quality control and they are seeking for more specialists. Human resource is one of the key factors for products' quality. ZTE has skilled experts team is devoted to guarantee reliability. Refer to statistic, over 33% of the senior engineers possess doctor's degree in ZTE's and the authorized engineers in each product divisions also have crucial contribution. The quality control specialists are the solid bases to ensure the products with high reliability. Their persisted endeavor for product quality and reliability is the prime momentum which makes the enterprise to enter the world of six sigma.

According to the annual report 2004, the Group placed much emphasis on product research and development. By leveraging on its own intellectual property, shared technology platform and strong innovation capability in R&D, the Group has launched new products to the market
rapidly. In 2004, the Group seized the opportunities from the recovery of the global telecommunications industry. Sales from the international market have significantly improved compared with the previous year. At the same time, the Group has made a significant breakthrough as a substantial cross-border telecommunications service provider and in developing new markets. 107
5 Analysis

In this chapter are we analysing our empirical findings. We have chosen to look at each company in a succeeding order and the empirical findings in the following order: We first start with looking at the innovation that the case company has done to see what kind it is, that is whether it is a sustainable or a disruptive one, but also to see how the company has handled it according to the theory: The Innovator’s dilemma and the four principles were they are applicable. After that have we chosen to look upon the marketing strategies used by the case company that is whether they have used the Push or the Pull model or both. Finally we look at which strategy, prospector or defender, we can use to classify the company with.

5.1 Hörnell International AB

5.1.1 Innovation

The company has developed a welding helmet with a very special eye-protective filter with UV (ultraviolet) and IR (infrared) filter layers and LCD (Liquid Crystal technique) layers to stop and to hinder nuisance and dangerous radiation and light but which also dims the welding beam light. The company has also developed a filtered fan unit that can be used together with the welding helmets, but we chose to focus our analysis the welding helmet with the special eye-protective filter.

The first impression was that this product was to be considered as a sustaining innovation that punctured the incremental change in the existing technology and which resulted in a technological discontinuity. Since technology discontinuity results in, different product forms than earlier products and gives opportunities to decisive cost, performance and quality enhancement over prior products. We continued with a deeper and further analysis of the empirical findings to see if we could find other arguments about the innovation.

The Speedglas welding helmets were in the beginning resulting in worse product performance than existing products and required further development and research as mentioned in the empirical findings and theory. The products were more expensive than those existing on the market and were also holding other features than existing products did. According to the theory should a disruptive innovation be cheaper than existing products and hold different features than existing products. Did this mean that we couldn’t see the innovative welding
helmets by Hörnell in the light of disruptive innovations? Our answer to this actually became: Yes, we could see them in the light of disruptive innovations. The reason why; is that the features the helmets held fits with the theory about disruptive innovations since the features differs from earlier existing products, but not the price. As the empirical findings from this case shows did the helmets result in higher productivity, less sickness absence, less after work on welded products and so on and which resulted in better economical performance of the customer companies. So even though the welding helmets were more expensive to buy in the first place in comparison with competing products were they cheaper for the customers seen on a long term basis. Due to this did we chose to see these helmets as cheaper in the long run than the existing products on the market, so this actually fitted with the theory about disruptive innovations. The theory also states that disruptive products under perform existing products in the market in the beginning and that was also the case with the Speedglas welding helmets and the empirical findings witness about the difficulties that the company had when they first introduced their product to distributors and to the market.

The product was also more convenient to use since the welders didn’t have to fold the helmets up and down all the time. Another function that can be seen as more convenient is that the welders were more protected against the nuisance and dangerous radiation and light than they had been before. This is also what the theory says about what a disruptive innovation should be. The size of the innovation seems not to differ from existing products as it should do according to the theory, but since the human head has the size it has have we chosen to not consider that when classifying the innovation. Welding helmets with the same features as the Speedglas helmets possesses seems now, according to our empirical findings, to have established their market share for welding helmets. Thus can we also consider a “disruptive technology change”, due to the company’s product, as accomplished which also fits within our theoretical framework.

*How they handled this disruptive innovation*

Since the theory about innovations also comprises some principles on how to handle disruptive innovations to be successful, as the case company has been, are we interested to analyse if the company has handled its innovation in accordance with these principles.
Principle One
The product was from the beginning further developed by the innovator at another company interested in the technology and the product, but which later chosen to divest the product idea since it didn’t seem to promise the wished sales and market share. The innovator eventually started a company, due to this new product idea that he had been working on and believed in. The first principle of disruptive innovation states that these kinds of innovations should be handled by new autonomous and independent organisations. Established companies don’t invest in low margin products that their customers don’t want until it is too late, often due to that they need the resources which their customers supplies the companies with. These arguments above fit very well with the first principle of how to handle disruptive technology, but also the theoretical reasoning around the principle.

Principle Two
Since the company was newly started it was also small and had the opportunity to grow even within a small market. The company’s product didn’t appeal to mainstream market in the beginning but the company still had the possibility to grow and invest despite the small market share they had from the beginning. According to the second principle does bigger companies find it hard and uninteresting to enter into newer small markets since they do not promise the growth opportunity that larger firms need. Larger firms also wait and choose to enter into these new small markets when they have grown enough to be interesting for them and by then it is too late. The case company could harvest the benefits of the first mover’s advantage since they were first with the product on the market and that’s exactly what the theory of the second principle mentions. The arguments and reasoning above can be found in the second principle and the theory of how to handle disruptive innovation.

Principle Three
The first company which was interested in the product hired the innovator to develop it further and also used market analysis to analyse the possible market for the product. The third principle highlights that the use of market analysis is not suitable for a disruptive innovation since the market is largely unknown and benefits least of it and this attribute gives the opportunity of the first movers advantage. This is also considered as being the innovators dilemma. The first company came up with the conclusion that the product would eventually be too expensive for the customers so they decided to divest the product. The case company instead used calculations to value the market and to get an estimate about the necessary sales
volume and wasn’t paralyzed of the disruptive technology and the unknown market for the product. The theory of the third principle is that companies often become paralyzed when facing disruptive innovations since they can’t make market estimates and by that they do not either understand how they should estimate and handle the market which rather should be done by a discovery-based planning. Companies facing these circumstances should also be prepared to learn from the market instead of using old knowledge. The case company focused on the marketing of the product and used several tricks to gain interest in the product and rather saw the market as an opportunity which demanded almost a missionary mission to gain acceptance for the product. The interviewee also mentioned the first mover’s advantage they had been enjoying on the market. Our point of view is that these arguments are in conjunction with the arguments in the third principle and the rest of the theory about how to handle disruptive innovations.

**Principle Four**
The supply and demand on the market wasn’t showing any signs of needs for a new product in the beginning but the mainstream market found interest for the innovation after a while. The theory of the fourth principle is that the existing technology overshoots the needs and demands of the market due to that the product performance progress is faster than the need and wishes of the customers. This gives opportunities for cheaper disruptive innovations to enter the market and to become competitive in it. The existing products on the market wasn’t overshooting the needs of the customers due to product enhancement which led to that the case company’s product could not in the beginning gain a large market share.

The products of the case company also first suffered from technical problems but which were solved after further development of them. After industrious work by the case company did they manage to get acceptance in the market and the customers showed interest for the product and their product became a threat against existing products. The customers after a while discovered that the innovation led to economical benefits for the companies using the product, which we mean can be interpreted as a lower price in the end for the product. Even though these arguments doesn’t perfectly hold with the fourth principle about how to handle disruptive innovations do we argue that they anyway hold to some extent, so we conclude that this principle was being partly handled according to the theory.
To conclude about the innovation at the case company Hörnell International:
The company has developed a disruptive innovation and has to a large extent handled this innovation in accordance with; the four principles of disruptive innovation, and the rest of the theoretically arguments and reasoning around how to handle disruptive technology.

5.1.2 Marketing

The interviewee mentioned that the company had been using both the pull and push process when marketing the products. When taking part of the empirical material one has to admit that this seems to be the case. The Push strategy is when a company uses promotion such as advertisements, exhibits, newsletters or other methods to communicate with wholesalers and others that are selling products to gain interest in their own products and to convince them that they should sell the product and spread the communication further down the buyer chain. The company had gained a lot of attention to its products through articles in the world wide press when it was first launched since it was a new application for a newly developed technology. By this the company automatically could enjoy the attention given by the media, but this wasn’t enough to market the products as the empirical findings shows. The analysis of the principles shows that the product was something new and unknown for the market and the marketing activities of the company indicates that the company had to enlighten the market and buyers about the product. This enlightenment was done with the help of visits to end-customers and distributors so to show them what benefits and advantages the product had to offer. This indicates that the product in the beginning actually had to be pushed out into the market. Especially since the statement of the interviewee witness about that they almost had to engage in missionary activities to gain attention and acceptance for the products they had to offer. We argue that these activities shows that a rather big portion off the marketing process where being conducted by the Push-process in the beginning of the life of the product. The theory behind the Push process also states that segmentation efforts and tailoring marketing programs are more effective than advertisements. As the empirical findings shows had the company also segmented the market to be able to aim their focus on chosen segments in the market, which even more indicates that they had chosen to make use of the Push-process as their main measure in the beginning to establish a foothold at the market for the product.

The Pull strategy is when a company uses advertisements to convince customers that they should by a product and thereby are a product demand built and the customers purchases the product from sellers, retailers and the producer. The case company engaged in advertisement
campaigns as well as customers and distributors visits to get a foothold for the products entrance into the market. The attention that the product idea had gained in the world wide media was also contributing to the establishment of the product in the market, but advertisement campaigns were more and broadly used when the product already had won market shares and the attention amongst customers. We argue that this shows that the company mostly used the Push-process in the beginning of the marketing campaign even though it was accompanied with some advertisements and the attention that the products had gained in the world wide media.

The company sold its products through distributors when the products had been more established on the market and also used supportive advertisement campaigns to draw attention toward the products. In the beginning there had been problems to get distributors to sell the products but that changed after a while and the products where asked for by the distributors. The company also could enjoy the first mover’s advantage which can be seen as being supportive and working as a booster for the attention gained at the market when the establishing at it had come through. This indicates that when the product well had got a foothold on the market the more use of the Pull process were being used than earlier had been the case. The conclusion about the marketing methods used by the company actually were both Push and Pull processes, but that the Push process where being more and extensively used in the beginning of the marketing establishment than later.

5.1.3 Strategy

The case company had a completely newly developed product which they tried to get into the market. The theory on prospectors define them as being; exploring new product and market opportunities and we think this is exactly what the case company had done. A prospector should also be maintaining flexibility and effectiveness, which we find in the case company since there was numerous of changes that were needed to be done on the product but also were a new product developed due to wishes from a customer. The co-operations that the company later had with some competing American firms also indicate that the case company had flexibility and was exploring new market opportunities which further strengthen the conclusion that the case company was a prospector.

That the case company actively seek to expand into new markets but also to find new opportunities as the theory says a prospector should be doing, also stresses our opinion that it was a prospector company. The company enjoyed the first mover’s advantage and could price
the products at a premium price level with high margins which is characteristic for a prospector, but also shows that the principles of innovations supports the prospector strategy activities. A prospector should evaluate the performance in effectiveness terms that is; doing the right things, and this must be considered as being the case with the case company since it was started just to manufacture and market a single product in the beginning. The theory also states that a prospector regards the marketing and product development as most crucial and important and that is what the empirical findings on our case company shows that they have done and this is further supported within the first and second principles of disruptive innovation. The Push-process that was embraced and extensively used by the company in the early stage of marketing the product also seems to support the prospector strategy.

The risk of product failure and rejection was high for the case company that had to work rather hard to convince the market as the empirical findings shows but as also the prospector theory states should be the case. The third principle of innovation which the case-company has handled as they should be doing according to the theory and which may be seen as being a further reason for why the company not failed or was rejected as can be the case for a prospector. So we believe, or rather interpret it as, that the principles actually support the prospector strategy.

The theory also mentions that a prospector should have a large portion of their revenues from new products. This absolutely fits the case company since it was started just to manufacture and market a single product that was completely newly developed and something unknown and unfamiliar for the market. Further the theory mentioned that prospector firms often had venture capitalists equity share holders and these were the circumstances for the case company which was being financed by loans from acquaintances and by a local investment fund. The industry that the company sold its products to was a rather common workshop industry, but if we choose to see the company’s product as the industry then it was at the growth state in its life cycle with very few competitors and an evolving technology which are the exact words of the prospector theory. So our conclusion is that this company is to classify as a prospector company.


5.2 **Lox Max AB**

5.2.1 **Innovation**

The company manufactures Harvesting heads which are used within the logging industry to cut-down trees, cut-off limbs, and cut them into convenient length. Those Harvesting heads are not invented by the company but they has improved and developed them further with several innovations which they hold patents on.

The company’s product is an existing product which they have improved the performance and enhanced the quality on according to them self. This improvement is used and valued by the customers and gives them economical benefits even though the product is more expensive than other products, but this benefit is due to that the company’s product is more efficient than competing products. Those attributes are typical ones for sustaining technology as described in the theory.

The theory is that sustainable technology through evolutions causes dominant design standards and configurations to arise which then become standard and are preserved by incremental evolution. Since Harvesting heads are more or less a standard with a dominant design within Scandinavian countries has the company merely contributed with incremental evolution of the product which are valued by the customers today.

We can’t consider the product as having contributed with any discontinuing evolution since that requires a different product form (what’s differs according to our empirical findings are some added innovations on the product but these hasn’t changed the product form in it self) than earlier products had even though the product according to the company gives; opportunities to decisive cost, performance and quality enhancements over prior products, which otherwise actually are the exact words used within our theoretical framework on discontinuing innovations. So our conclusion about the company’s products and innovations is that they are products with sustaining technology and innovations that are further improved by incremental evolutionary steps.

_Different view on the findings_

We have though found some interesting material about the case company in the empirical chapter why we will try to analyse those findings in a bit different way. The products that the
company manufactures are more or less considered as a standard within the logging industry in countries using the CTL-method, but they seem to be something new and more or less disruptive on other markets in the world. The reason for this could be that the logging industry is very conservative as our interviewee witness about in the empirical chapter and the product may once upon a time was a disruptive innovation. The forth principle also suggest that there may exist suitable entry points into markets depending on customer behaviour. Since the case company also seems to handle the products differently when marketing them at markets that use the full-tree method, or is still using manual methods, we find it interesting if the product as disruptive on markets that hasn’t changed into this technology yet due to conservatism or insufficient economical development holding back technology changes. If the case is that there are markets that haven’t adopted this new technology and methods yet for how to harvest trees since the paces of the technology shifts seems to be very slow within the industry and the market should also imply that the case company actually must take the four principles of disruptive innovation into account when acting at these markets.

In this different analysis we must draw some conclusions that aren’t supported within our empirical findings since there aren’t any facts that can support these conclusions due to that these markets are recently entered by the case company. So we must use arguments which are built on our beliefs and earlier findings from the other Swedish case company, but which might hold anyway since there are some similarities. When analysing the principles of disruptive innovation we must also use empirical findings from other markets than the analysed market but which shows some similar environmental factors.

There were several companies that tried to market and to sell products which used the CTL-concept (Cut to length), but despite that there may exist some first mover’s advantage if the company was first to enter into a new market in some part of the world using older methods. Since the company recently has opened a daughter company within Russia we can try to look upon the products from the viewpoint of the Russian market. The theory about disruptive innovation is that these innovations should have other features than existing technology but result in worse product performance than the existing technology. The Russian market isn’t even as close to the mechanization grade as the Scandinavian markets possess according our empirical findings. Seen from this viewpoint would most probably the Harvesting heads have other features than the existing technology, this since the mechanization grade within this market is very low. But the Harvesting heads would not result in worse product performance
than the existing technology, but this may also is due to that these heads already has been improved and developed over many years within the Scandinavian markets so we chose to look away from this argument in the analysis.

The technology with harvesting heads ought to hold other values than the non mechanized logging industry possesses and our belief and opinion is that these products will under perform existing products in the mainstream market in the beginning. According to the theory should a disruptive innovation hold other values and under perform existing products in the market in the beginning. We can assume that these products mostly will appeal to marginal or fringe customers in the beginning who have other values than the mainstream market customers have, especially if the statement in the empirical chapter from the interviewee about the previous case company (Hörnell) holds true that: there are always some individuals that want to test new technologies but then there are always those who don’t like to take chances because it’s too new. Our belief is also that these products can be seen as smaller and more convenient to use as a disruptive innovation shall be according to the theory, especially in comparison with a non mechanized logging industry were one might have to use chainsaws and drag the entire tree in it’s full length to an forest road and then load it onto a truck. A disruptive innovation should also be cheaper than existing technology and we argue that these Harvesting heads can be seen as that if one calculates the amount of trees that can be felt within a certain amount of time since our empirical finding witness about how these Harvesting heads increases productivity within the logging industry. So our conclusion is that the products can be seen as being more or less disruptive when one analyses them further and from another viewpoint. This also means that there are possibilities for the company to be in front and to lead a new market into a technology disruption if they are entering that market at an early stage. To be able to be successful in a new market the company then should take the fore principles of disruptive innovation into consideration, why we continues with analysing if the company has been acting in alignment with those principles.

*How the company handles the products when facing different environments*

To be able to do this analysis we must use the existing empirical findings from several different markets that we think shows quite similar environments and then draw a conclusion built upon them and our reasoning on why we thing they should hold on a broad term basis.

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108 This statement is to be found in the empirical chapter about Hörnell International.
This analysis is built upon the theoretical framework of: The Principles of Disruptive innovation and its principles.

**The First Principle**
The company in itself is built upon and around the product and hence can be considered as aligned with its products and the returns and the resources they provide, which is mentioned as an important condition in the first principle. Due to this has also the company a cost structure that is fitted to their operational environment, products and markets also this mentioned in the first principle. When the company further expands its operations into new markets do they mostly take use of either distributors or newly started daughter companies within these markets as for instance in Russia or in the United States which is recommended within the theory. These findings fit the theoretical framework on the first principle of disruptive innovations according to our point of view.

**The Second Principle**
Bigger companies do not enter into small markets since they can not grow within them even if the markets may be big markets tomorrow. That is also the reason why they often avoid entrance into these markets until it is to late according to the theory and which also gives the early entering company a first-movers advantage. Since the company is to be considered as being quite small in international and global terms and also uses distributors and newly started and thereby presumably small daughter companies when entering into new markets, has the company the opportunity to grow within these markets. This opportunity arises due to that the case company thereby has a cost structure within these markets that are most accurately fitted with them and can gain growing possibilities there in. Companies being successful within disruptive markets should be small sized to posses the growth opportunity as large firm cannot seize within them as described in the theory. These are almost exactly the suggested reasons that are to be found about the principle two of disruptive innovation in the theory.

**The Third Principle**
The products are already previously marketed and sold on the Scandinavian markets and the company has obtained skills on how the market should be handled and what problems may will occur when marketing and selling the products. Since this knowledge exists in the company they probably also knows what to expect of new markets and how one can learn from them. As the empirical findings shows from the case company are the marketing
executive also aware about that they may have to change strategies and learn from how new markets are behaving and how they work in the reality. The third principle is that a company should be prepared to learn from a market and that they should not rely too much on market analyses when marketing a disruptive innovation. A company can also get the first movers advantage when marketing a disruptive innovation if they do not get stuck on market analyses. The company tries to do a check-up on the mechanization grade within the logging industry in a new market before deciding if to enter into that market, but we don’t really know how we should interpret that information in the light of the theory, it could be negative but also positive depending on what conclusions are being drawn by the company from it. These arguments anyway show that the company has awareness about factors that are present at new markets, but also about the factors that are high-lighted in the third principle of disruptive innovation, but with a question mark on the check-up on the mechanization grade in new markets.

The Fourth Principle
The market share for the product seems to be small in new markets from the beginning since there are arguments from the interviewee in the empirical chapter about that it is almost a missionary mission to market the products and the special concept of CTL in new markets that are more used to work with the full-tree concept, or that not are as much mechanized as the Scandinavian markets. The theory of the fourth principle is that a disruptive innovation eventually can threaten existing products due to that the existing products may overshoot the market demand on product performance or that the disruptive innovation is cheaper than existing products. Even tough there aren’t any overshooting of the customers demand from existing products today at the new markets is there evidences that the company’s products holds potential possibilities to gain market shares and possibilities to replace existing products on these new markets. The argument and evidence for this is that this has already happened on the Scandinavian markets and that the company also sells products on other markets already today. One of the reasons for this is that the products can be considered as being cheaper if one takes into account that they improves productivity in comparison with other existing products working with the full-tree or manual concept. We argue that these reasons presented above actually holds when looking at the theory about the forth principle and that the company has acted in a quite proper way when handling the products under these circumstances.
The Conclusion about this innovation

Is that when analysing products with the knowledge about the existing methods used in the Scandinavian logging markets and other modern logging markets; are the products and innovations to classify as being of an incremental and sustainable kind. But when one takes into consideration that the CTL-method not yet has been implemented in some markets due to conservatism or slow economical development can the products also be seen as being disruptive. This most probably raises questions that are needed to handle and to solve for the company when it comes to how they should act on the different markets and at different times. But as our analysis shows has the company in a quiet broadly way hand led their products in accordance with the four principles of disruptive innovation and the theory around them when acting on these markets, even though there is a question mark on the third principle.

5.2.2 Marketing

Since we have been analysing the products in two different ways, or rather two perspectives, do we chose to implement this method also when looking upon the marketing strategy as well.

In Sweden the company uses exhibitions as a dominant part for marketing their products but this is also accompanied with advertisements in media and customer visits with personal marketing since there aren’t too many end-customers of the company’s products. The company also to some extent relies on distributors to give service on their products and work actively with building awareness about the company and its products through reputation with the help of “ambassadors” that speaks well about the company’s products. This marketing technique used by the company clearly indicates that they use a mix of the Push and Pull process to market and hold the market share of their products within the Swedish market, especially since neither of them seems to be dominating over the other one. The theoretical reasoning behind the Push-Pull process is that companies uses both advertisements and other activities to get attention of the customers and uses exhibits, brochures and other measures to convince and promote the products toward distributors and customers all in a mix of the two processes. Example of the Pull process can for instance be that the company works actively to strengthen and develop a solid reputation as a leader in the field, as the interviewee mentioned and were he gave the “Log Max ambassadors” as an example. Advertisements are also used by the company and are mentioned together with reputation building within the theory about Pull strategy. The Push process are supported with the exhibition earlier mentioned and visits.
to customers and other measures used to communicate with potential supporters and as mentioned within the theory about the Push strategy.

When marketing abroad does the company mainly use daughter companies and distributors to market and sell the products. The empirical findings also witness about a missionary mission that need to be done when marketing products that uses another method or concept than the one used in the prevailing abroad market. This missionary mission is done through having a reference product placed within a market which can be tested and used by those interested. The company by that receives an opportunity to build up a reputation and to spread the word about the company and the products out to the market. But this also results in an opportunity to focus on special end-customers that gets the possibility to test the products. These kinds of activities were we consider the missionary mission as an example of it are mentioned in the Push theory were tailoring marketing programs are mentioned as a Push method.

The company uses as mentioned above, also exhibits to market products. Even tough the exhibit mentioned in the empirical chapter is in Sweden, is it very well known all around the world and has an great impact and gives reputation on the world market that affect consumers. Due to this we consider this exhibit as being a part of the abroad marketing action as well since it has an impact worldwide. Exhibits are mentioned as a Push activity which further puts focus on the Push process when marketing on these out of Scandinavian markets and newly entered markets unfamiliar or unaccustomed with the CTL-method. The company also uses to some extent advertisements to market their products and which are a typical Pull process method.

We draw the conclusion that the company uses both the Push and Pull process when marketing at the domestic and Scandinavian markets. Since these markets doesn’t hold any especially growth potentials for the company according to the interview, this can be interpreted as that the company defends and holds its market shares and positions within them with the help of the Push-Pull processes.

But when the company handles the products as being a disruptive innovation we do find a much larger and bigger leaning and alignment against and in accordance with the Push process. This appears when the company are marketing the products in markets where the CTL-method not is broadly established as in Russia or North America. So the case company
actually seems to act differently depending on what market environment they are facing and by that also alter their marketing process.

5.2.3 Strategy

Even when it comes to strategies can we spot that there are some differences that the company implements, it seems like the company is a defender when acting on the Scandinavian markets accustomed and used to the CTL-method, but rather act as a prospector when entering and establishing into and at new markets unfamiliar and unaccustomed with the CTL-method.

A defender company should have narrow market domains and a stable set of products and customers according to the theory around defenders. The case company holds a narrow market domain and a stable set of products within the Scandinavian countries which indicate that it is a defender company. Despite the fact that the company recently has bought Caterpillars manufacture of harvesting machines in Sweden, do we consider the product set as stable since the theory otherwise requires that the harvesting machines are to consider as; a cutting edge technological innovation, which they obviously not can be seen as. A defender company also defend itself to be able to hold a stable market by either having low prices, keep advertising and other promotional costs low, engage in vertical integration, offering limited range of products or offer better quality or service. Our case company has chosen to hold a stable market by offering a limited range of products and by aiming at having a higher quality and service than the competitors have. The company also seems to make use of the marketing process Push-Pull as a measure to defend itself as shown earlier in the marketing analysis.

The market for a defender company tend to be mature and have a well defined technology, products, and market segments and these characteristics are to be found in the most part of the case company’s domestic and Scandinavian environments and markets. The theory also states that the most sales should be repeat or replacement purchases and since the company quite often market their products towards customers that are replacing existing competing products can we consider this as being the case at these markets. The case company also shows a good profit and has a good cash-flow which further highlights the theoretical coherence. These arguments and reasons do we evaluate as evidences for that the company has a defender strategy within the domestic and Scandinavian markets.
But the case company also seems to have another strategy and that is when they are trying to establish the company and its products at foreign world markets. These markets are mostly unfamiliar and unaccustomed with the CTL-method that is characteristic for the company’s products. The company rather seem to act and behave as a prospector when trying to enter into these markets.

The theory says that a prospector strategy entails active programs to expand into new markets and stimulate new opportunities. That is what the company has done since they entered into the Russian market but also have several distributors around the world as in Brazil and United States. The empirical findings given by the interviewee shows that there are several possibilities which the company can see as potential markets for their products in the future, which further consolidates the impression that the company acts as a prospector company when seeking new markets to enter. Further does the Push process, that are used when marketing at these new markets, seem to support these prospector activities since it gives the company a possibility to show how their products and the CTL-method work in real life with the help of reference products. A prospector should also possess technological flexibility and the case company has several times done changes on their products to meet the technical requirements since different forests has different trees that require some adjustments on the products.

The value of the first mover advantage in a market gives opportunities to have premium prices for a prospector. The company already has chosen this price policy within the domestic and Scandinavian markets, but entering into new markets might give the company durable and sustainable growing possibilities with this price policy if they are amongst the first companies entering into a new market. Our opinion is that the four principles of disruptive innovation and the Push process supports and gives the company a possibility to achieve this purpose.

A prospector also regards boundary-spanning positions as marketing and product development as being crucial. The case company has marketing actions at all markets were they are appearing and also spend time and resources on product development as shown by the patents held by the company. So there are some similarities with prospecting companies as well and we actually mean and are convinced that the company is a defender when acting on the domestic and Scandinavian markets, but behaves and acts as a prospector when entering into new markets unfamiliar or unaccustomed with the CTL-method. The reason for those
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ambiguous findings from the company’s behaviour might be that different markets in the world aren’t marching in unison paces regarding technology progresses and that also opens ups possibilities for the company, but also highlights the necessity of having different strategies at different markets as already mentioned in the innovation analysis.

5.3 Xerxes

5.3.1 Innovation

The innovation of USB flash driver in Xerxes can be looked as disruptive innovation. The new disk is small in dimension and light in weight, but can store more than a few floppy disks do. Is USB flash driver really cheaper than floppy disk? It is definitely that a single USB flash driver is more expensive than one floppy disk. In another hand, probably one person needs hundreds of floppy disks during one year. But one USB flash driver can be used until next year even longer with the characteristics of long life and repeated use. From the economic aspect, hundreds of floppy disks are expensive than a USB flash driver. At this sense, USB flash driver tallies with not only smaller and more convenient to use the two features of disruptive technologies but also cheaper character.

Along with the development of computer technology, the requirements of large file and high speed transfer was impending. The original floppy disk wouldn’t meet people’s demands anymore. The thought of making a new kind of memory disk was derived from the innovator Deng had trouble with floppy disks. They were inconvenient and incompatible with the whole fast-upgrading industry. In fact he was one of the millions of floppy disks customers. He wanted to make a smaller disk that was more stable with a more storage capacity. We could notice that the problem came from the consumers. The new product USB flash driver led to the market demand.

This USB flash driver was a bit too amazing for the customers at its inception. Even investors couldn’t anticipate this product’s prospect neither would take the risk. Hence the lower performance in Xerxes resulted in zero margins. Then Xerxes focused on smaller agents and niche markets of firms and gifts buyers less price sensitive. Even though Xerxes passed a hard time at innovation period, the product was toward the trend of the consumers’ needs. After people took cognizance of the USB flash driver, Xerxes harvested good profit with high
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prices. Rapid growing of the market, more and more manufacturers set foot in this realm. As an innovator of this product, Xerxes has deserved from the “first mover” advantage and become the victory of USB flash driver markets.

How Xerxes handled the disruptive technology

Four principles offer a framework of disruptive technology on why the management practices that are the most productive for exploiting existing technologies are anti-productive when it comes to developing disruptive ones. Finally suggested ways are contributed that managers can harness these principles so that their companies can become more effective at developing for themselves the new technologies that are going to capture their markets in the future. Xerxes can be a successful innovative company. Let’s see if Xerxes really tracked on the four principles.

Principle One

The first principle states that it is the customers and investors instead of managers who dictate how resources will be invested in companies. As such, in order to survive, companies must provide customers and investors with the products, services and profits that they require. The high performing companies, therefore, become adept at snuffing ideas that their customers reject. These companies find it very difficult to invest adequate resources in disruptive technologies -lower margin opportunities that their customers don't want. Consequently, these companies hesitate to invest adequately in disruptive technologies until the customers want them, which by then would be too late. Christensen suggests that the only viable way to harness this disruptive innovation principle is to create an independent organisation with a cost structure tailored to achieve profitability at low margins around the disruptive technology. The USB flash driver with disruptive technology was handled by a newly started company in 1999. It was hard for the founders to convince investors to inject capital or production line at the initial period, since those investors were not sure if customers would buy the products. They wouldn’t like to take the risk to invest the completely new USB flash driver. Eventually one Singaporean firm invested Xerxes and set up a joint venture company. For this, it is coincide with the suggestion method. Xerxes’ low performance at the beginning obviously would cause the low profit even deficit financing. For the Singaporean company, they created an independent firm-Xerxes which the cost structure tailored to the profitability.
Principle Two
The second principle of disruptive innovation is small markets do not solve the growth needs of large companies. Therefore, companies which initially entered small emerging markets and then progressively grew larger, find it increasingly more difficult to enter even newer small markets that are destined to become the large markets of the future. To maintain their growth rates, they must focus on large markets. Some companies in such a situation wait until the new markets grow large enough to be worthwhile but that is not often a successful strategy. Ultimately, it is small organisations that can most easily respond to the opportunities for growth in a small market. Xerxes started from the small segments of the market and seize opportunities. After the disruptive USB flash driver gained customers’ notion, many companies would cooperate with Xerxes. As said, it is too late. By then, Xerxes itself was growing stronger and market shares increasing speedy and the products trended the bright prospect.

Principle Three
The third principle asserts that markets that have not yet existed before cannot be analysed. While sound market research and good planning followed by execution according to plan are the hallmarks of good management, they are often irrelevant in disruptive technological innovation. Confronted with disruptive technologies, established companies which normally demand quantification of market size and financial returns before entering a market either become paralysed or make wrong decisions because they demand data on markets that don’t yet exist. To address the above, an approach acknowledges that the right markets and right strategy for exploiting them cannot be known in advance, so managers assume that forecasts are wrong rather than right and hence, the strategy they have chosen to pursue may likewise be wrong. Don't bet all your resources on being right the first time. Think of your initial efforts at commercializing a disruptive technology as learning opportunities. Make revisions as you gather data. Face to this new product, who were the targeted customers and which markets should be emphasized and how enlarge the production were almost impossible to predict. However, it do exists amount of computer users especially this USB flash driver is more suitable for travelling businessman and companies. Xerxes found the point and aimed this mainstream to develop its markets.
Principle Four
The fourth principle recognises that technology supply may not equal market demand. Often, we find that the pace of technological progress in products exceeds the rate of performance improvement that mainstream customers demand or can absorb. As a result, the products that are currently in the mainstream eventually will overshoot the needs of their original customers, while the disruptive technologies that underperform relative to customer expectations in the mainstream market today, may become directly competitive tomorrow. As such, only companies that carefully measure trends in how mainstream customers use products can successfully catch the points at which the basis of competition will change within the markets they serve. The advice is to move ahead early and find the market for the current attributes of the technology. You will find it outside the current mainstream market. You will also find that the attributes that make disruptive technologies unattractive to mainstream markets are the attributes on which the new markets will be built. Since 2000 the moveable memorizer gained notice among the customers, various brands and similar products appeared on the markets therefore the competition became more and more intensively. Distinct industries and clients have various requirements on the function of moveable memorizer. Xerxes has been putting efforts on R&D and enhancing the core technology to meet varied demands of moveable memories. Coinstantaneous Xerxes has been inventing many other products and applying for patent and become the leader of Mobile Storage, Wireless Data and Digital Entertainment three products.

It is only when managers understand the four principles of disruptive innovation that they can accommodate or harness these forces to their advantage instead of fighting against them and be overpowered. As we can notice the USB flash driver has no confliction with the four principles. When USB flash driver first appear, they offered lower performance in terms of the attributes that mainstream customers care about. This disruptive technology had less capacity than the old technology floppy disk. But USB flash driver had other attributes that a few fringe customers value. They are typically cheaper, smaller, simpler and frequently more convenient to use. Therefore, they open new markets. Further, with experience and investment, the developers of disruptive technology would improve their products' performance and they eventually were able to take over the older markets. This is because they are able to deliver sufficient performance on the old attributes, and they add some new ones.
Xerxes gathers employees’ innovation ideas, in other words, they are close to the market, because Xerxes’ employees are the USB flash drivers’ users. And they have more knowledge on it than other consumers. They pay much attention the resources such as huge investment on the trial innovation and good training programs. They don’t give up any possibility of innovation, since hey believe someday some of the suggestions will become a success.

5.3.2 Marketing

This objective of this section is to outline key connective concepts that relate push or/and pull marketing strategy in Xerxes. Target market and market segmentation issues resolved, analysis switches to the fundamental decisions about channel partners. We might consider Xerxes adopt pull method first then utilized the combination of push and pull strategies.

Xerxes conducted advertising on relevant websites to penetrate the idea of the USB flash driver. At the starting Xerxes thought online marketing efforts could achieve success on generating new revenue streams, making productivity gain as well delivering cost savings. Enhancements in USB flash driver ease of use causes increasing numbers of consumers to trial it. They also acted as teacher to show customers how to use it to foster the market. Product trial leads to one (or more) usage experiences which then become a basis of customer knowledge on the USB flash driver. After the decreasing of purchasing inhibitor, the more interests attract consumers in this new product and behalf on Xerxes. It is accordant with the Pull model which the manufacturer goes to end customer directly to present the product. After customer know the product and also has consumption appetency, they will go to the retailer to ask this particular brand or certain product. As such, retailer reverses to the wholesaler with customer’s demands and wholesaler back to producer to play orders.

In succession, Xerxes made much effort to expand agents. Personal selling and trade promotion by Xerxes were used to create awareness, educate partners and close sales. They gave agents support and convenience as much as possible to encourage them to be active role in creating customer and end user demand for the product. Respondent talked about the hard process to find USB flash driver agents at the beginning as well. Agents played significant role during the selling activities. As Xerxes was the “first mover” on USB flash driver, agents also got benefits from this advantage. When agents were encouraged by the manufacture as well as driven by profits, they strive to push the products to wholesalers. It’s the same sequence that the wholesaler tries to sell more to retailer and retailer does the best to distribute the products to end users. Agents knew appropriate amounts customer behavior of low
consumption owing to high price and gave the feedback to Xerxes. In allusion to this point, Xerxes picked targeted group customers like company and gifts buyers. We can notice what Xerxes has done with agents reflect the Push model.

After 2002, however, the flash card market boomed, with over 100 domestic producers. When the performance of two or more competing products has improved beyond what the market expects, customers no longer base their choice upon which is the higher performing product. The basis of choice often evolves from functionality to reliability, then to convenience and ultimately, to price. Xerxes injected huge amount of investment to apply for IPR (Intellectual Property Right) so as to increase the company’s reverence in some way. Xerxes has been struggling with tortuous companies to protect their patent right. How to maintain the leader position of the USB flash driver? Xerxes emphasized to achieve the ISO, ERP those powerful international standards and cooperate with IBM, Dell those well-known companies to increase the prestige among customers. Brand development, media advertising even price reduction methods have been using to pull customer’s loyalty to be the winner in the competition. Xerxes focused on maintained and growing customer demand for products and services. According to push model, Xerxes enhanced the management of the agents. Care agents were taken by Xerxes to ensure that any programs or campaigns that are executed reflect the active involvement of channel partners.

5.3.3 Prospector

We found that the company’s strategy was focused on creating new business opportunities by developing new technologies, develop and broaden products lines, but also on strengthen their position in international new markets. “Market oriented, technology powered, quality focused” Xerxes keeps the fast growing momentum with its commitment to technology, investment in innovation. This seems to be corresponding well to what Miles and Snow (1978) refer to as a Prospector strategy. The basic point of prospector and defender is differing on locating and exploiting new products and market opportunities. They also mean that prospectors tend to be organize into product divisions; this also seems to be the case for Xerxes which is organized to create the necessary on their three product/technology areas.

One of Xerxes’ strategies in the previous chapter is internationalization. The increasing number of strategic partners and distributors build up a strong global network. Accounting for the NO.1 share in China's USB Flash Driver market, Xerxes’ products are sold to over 50
countries. Broad partnership turns out high efficiencies and mass opportunities Xerxes commits in providing continuous innovation and reliable quality to meet the highest customer standards in order to build up strategic business alliances. OEM/ODM products are provided by Xerxes to worldwide parties. Up to now, Xerxes has set up the long friendly relationship with lots of partners around the world. With strong background and international experience, Xerxes keeps growing and globalizing rapidly.

As a prospector, they always prove all the possibilities and achieve the highest flight place. For Xerxes, the clue of success is keep ahead and domain advantages on core of technology. Xerxes invested millions of capital on R&D to innovate new products. They concern the signals from consumers and react the challenges quickly, such like they noticed the demands of USB flash driver. The abundant R&D strength and enormous launch resulted Xerxes owned many innovation and patent products and benefited from the “first mover” advantages.

The prospector’s control system is decentralized which needn’t span several hierarchies from top manager to operation level. Xerxes’ work programs are flexible, and they encourage participation from employee personnel in the mind-on innovation that enables their suggestions to succeed. They recognize that the good results may come from projects where they tap the skill, and secure the suggestion, of those who work in the company from day to day.

From the tough rise in 1999 to prospective prosperous present, Xerxes focus on core technology and patent to meet the challenges and grasp the future trend in order to provide the new products to customers. Going with the drastic competition, Xerxes is approaching to maximize the market shares and expand the market segments.

However, Xerxes also attempted to secure the domestic markets and controlled the highest sales amount for USB flash driver. They adopted offering lower prices to pursue the big market; increasing the quality to win the prestige of the company; and providing better service to agents or end customers to win the competition. At this aspect, they act defender’s role as well. It is a contradiction with the theory that defender and prospector are mutually incompatible. But this doesn’t have to imply that Xerxes is stuck in the middle between these two positioning strategies. This is because reducing prices not seem to be the primarily way for Xerxes among the competitors. And even if a company is using a prospector strategy to
attain a competitive advantage it is still important to locate the existing market and maintain the stable product, although it may not be the most important factor to become successful.

5.4 ZTE

5.4.1 Innovation

In 2004, ZTE independently developed and launched GoTa, the world's first digital trunking technology based on CDMA2000. This case is responding to sustaining technology which improves product performance on existing products in some way.

ZTE has been adhering to its customer-oriented principle. Its biggest domestic customers are China Tietong and China Satcom. GoTa program differs to a certain product. It needs time and partners’ cooperation to complete this project then the partner can provide the service of GoTa system to end customers. ZTE delivers to market the products customers need, and thus they are able to realize the benefits and maximize R&D investment. ZTE’s R&D is market-driven. This means that they research, develop and commercialize what their customers need. Innovation is a key driver in ZTE’s success, and they maintain strategically located R&D hubs in countries around the world.

As empirical part stated, it exists lots of inconvenience of the traditional communication system. GoTa offers many benefits, including faster access, much improved channel efficiency, enhanced privacy and the flexibility to expand the system as demand grows. GoTa also allows large numbers of trunking users to share fewer communication resources and significantly improves the speed of call connection. In fact it’s a huge investment for building this platform. However, this GoTa system overcame those problems, it increases work efficiency and save the costs from other parts. Owing to these advantages, end-customers were attracted to join this network and buy your products. From this sense, GoTa program is radical and incremental to coincide with the characters of sustaining technology.

Technology innovation is the permanent theme of enterprise development, and continuous technology innovation is the source motivate to continuous development of enterprise. ZTE keeps developing products with independent IPR (intellectual property rights), thus solving the pivotal problems in the process of technology innovation.
How ZTE handled Sustainable Technology

It seems sustaining technology is much easier to be conducted on the markets compare with disruptive technology. Probably there is also another reason to give you an inaccurate understanding, because GoTa is not a concrete product but service oriented company. Additionally ZTE is a pretty big company which has already gained high prestige. Generally ZTE’s sustainable technology GoTa doesn’t apply to four principles of disruptive technology.

5.4.2 Marketing

As ZTE is the largest telecom manufacturer in China, it possesses high prestige in this industry and superiority among the competitors. The advantages of ZTE pull customers’ belief on it. Basically ZTE only focused on pull strategy on domestic market and we can also say ZTE adopted pull method on the innovation of GoTa system at the beginning. As we mentioned previously, GoTa is provided as a service and this project is not for individually. ZTE’s competitors in China are just a few and it is one of the biggest domestic dominants in telecom industries. Its partners are also pretty big companies such like China Tietong and China Satcom. Any completed GoTa project could be seen as an animated advertising. In fact GoTa’s direct customer is his partner. Related to the Pull model, the partner is like the agent, so the marketing process is only one step. More and more consumers become sophisticated about communication service. Consumer demand (the market potential) will foster a power in the marketing cycle. The power will drive the industry to expedite network building and service innovation, which in turn will help innovation deployment.

In the overseas market, ZTE utilized pull and push strategy. At the inception, ZTE’s good repute and GoTa’s successful project arrested international customers, for instance the first GoTa project in Russia. Subsequently overseas branches and cooperation were set up. Then ZTE emphasized more on push strategy, and of course pull strategy is exerting as well. Local customer-oriented program operates on planning, sales and marketing and customer services for GoTa and ZTE brand network equipment and solutions. In addition to regional marketing consulting organizations, more than 40 branches operate in 70 countries to provide sales and marketing and after-sales services for its partners and customers.

ZTE profoundly believes in customer-driven strategy and is dedicated to translating that strategy into real-world business practice. GoTa is committed to providing their partners and customers access to customized products and services quickly. GoTa will work with channel partners to provide customized solutions for customers and prospects in different sub-regions.
Through joint efforts with channel partners, GoTa will be able to provide better solutions, faster service and bigger savings for their customers.

On the basis of existing CDMA, the transformation of traditional fixed line networks to next-generation networks, ZET had a chance to grow into one of the leading suppliers on GoTa program. But this prospect is not without major challenges. First, it is not easy to enter the developed markets, due to the existing sophisticated food chain and high standardization requirements. Secondly, most of ZTE’s current export revenues are from developing countries, which, as long as that situation lasts, may pose an "accounts receivable" problem for the company. Finally, ZTE must contend with the impact of low price strategies deployed by other companies to enter the same developing markets that ZTE targets.

At present in China the main pattern of GoTa program is bought by separated customers. There are not only the obstacles on the telecom communications, but also it’s too costly in economy. The suit of equipment is pure expense and it also needs huge investment on network building and maintenance. It restricts the consumer and markets. The reasonable model for GoTa program is one telecom communication company provides service to numerous group customers. This telecom company needs to invest a big network, but the resource is shared by many groups or customers, so the cost is much lower. Then the service quality and maintenance fee are assured and it also can drive the development of the whole industry chain. Face to those challenges, ZTE also need conduct push model to develop big partners domestically.

In addition, ZTE’s university and training programs are also the appropriate tools for advertising. The education system pulls attracters to attend the study and its push process during the study period. ZTE is participated many exhibitions and conferences to enhance its repute and gain customers’ loyalty.

5.4.3 Strategy

ZTE effectively carried out its marketing strategies, so it acts a prospector. ZTE passed the four period of internationalization and also invented and developed many patent products and new service.

Since ZTE’s inception, it has maintained close ties to the world of research and has helped to push forward the boundaries in relevant fields of technology. GoTa is an innovation based on
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CDMA. ZTE’s strategy has been trending towards providing more technology value-added products. In 2004, ZTE have continued to concentrate on overall corporate development with coordination of marketing, R&D, capital expenditure, staff development and management. ZTE has wireless, network and terminal (mobile phone) three products series.

In the domestic market, competition among domestic telecommunications service providers has been intensifying with the nature of the competition based on monopolization of resources shifting towards competition based on technology and service. In view of this and guided by customer requirements, the Group implemented a product differentiation strategy, and adopted new marketing and business models. The Group made significant improvement in balancing business development in different geographic regions. In the international market, the Group has made a breakthrough in its internationalization strategy. By successfully taking advantage of business opportunities offered by the recovery of the global telecommunications industry, revenues from international sales increased substantially as compared to previous years. Meanwhile, a significant breakthrough was made in sales to major multinational telecommunications service providers and penetration into new markets. In the past year, ZTE made significant improvements in internal management, brand promotion and corporate organization, laying a good foundation for further breakthroughs in international market.

ZTE’s control system is flexible and decentralized. Systematization and standardize R&D management including decision-making management system, capital guarantee system and products management system are allocated in ZTE properly. It is the foundation on innovate new products. Inspiration system and talents cultivation system are necessary for technology innovation.

The key to ZTE’s success consists of focusing on high-tech markets and profitability, committed and capable employees, a healthy internal social climate. Close and long-term cooperation with customers and being open to new opportunities these attributes give ZTE an excellent foundation on which to face the future.
6 Conclusions

In this conclusive chapter are we giving answers to our research questions, but also tries to have a wider discussion about our findings and the case companies.

Our three research questions were presented in an earlier chapter but are repeated here to give the reader a reminder:

Q1: What different kind of innovations can we find and how are they handled by the studied companies?
Q2: How are innovated products being marketed by the studied companies?
Q3: What strategies do the studied companies use to utilize the prospects of innovated products?

The solutions we have found with the help of our empirical gathering and analysis of and amongst the studied companies are as follows:

Answer on Q1

The different innovations that we have found are classified with the help of the theory presented in The Innovator’s Dilemma\textsuperscript{109} were two different kinds of innovations can be found and these are either sustainable innovations or disruptive innovations. Amongst our four case companies have we found both kinds of innovations, but the majority of them are disruptive innovations, but this is also a matter of interpretation since one of the case companies have a product which can be seen or classified differently depending on the environment and the market it is sold on. Our conclusion anyway is that we have found both kinds of innovation no matter what interpretation is being done.

We have also found that the case companies have handled their innovations in accordance with the four principles presented in the theory when the innovations are to classify and consider as being disruptive ones. This finding also holds for the case company which has a product that can be classified differently depending on environment and market. This company acts in accordance with the principles when their innovation is to consider as

disruptive, but not otherwise. The other company having a sustainable innovation does not either regard or act in accordance with the principles when handling their innovation.

**Answer on Q2**

To be able to answer this question did we chose to use the Push and Pull strategy or the combination that there exist called the Push–Pull strategy. When looking upon how the innovations have been marketed can we spot a difference between the studied companies. The studied companies are from two different continents but also seem to focus on some what different customer categories and also holds different innovations and products which may explains the difference. The Swedish case companies studied are more or less to consider as being active within industrial markets with a bit more expensive and specialized products, whilst the Chinese companies studied has products that does not show such similarities with one another as the Swedish products and companies does. Neither is there any similarity between any of the Chinese companies and the Swedish companies studied which might explain the discovered differences amongst them.

Our findings show that the Swedish case companies active within more industrial markets mostly uses the Push-strategy in the beginning when marketing their products, this to be able to establish and win attention for and to the products at chosen markets, but also to gain a foothold at them for the products. (But there is though a difference that can be spotted and that is when the second Swedish case company (Log Max) markets its product within the domestic and Scandinavian markets where their innovation or product can be seen as being sustainable as presented above. Then the company uses the Push-Pull strategy already from the beginning). But when the companies’ products eventually have become established and have won needed attention and foothold at the markets then they focus more on using the Push-Pull strategy. So it seems that they uses the Push strategy in the beginning but later swaps into the Push-Pull strategy.

The Chinese companies on the other hand have mostly been using the Pull strategy for the market entrance and establishment for their products and to be able to get them a foothold at the market. When this establishment and consolidation within the market are being done and the products have got a foothold do these companies also swap into the usage of the Push-Pull strategy combination. So here we do find a difference against the Swedish companies since the Chinese companies instead starts with the usage of the Pull strategy and then swaps into
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the Push-Pull strategy. As we see it can there be several possibly causes to why this is the case, first of all is there differences between the products both between the Chinese companies but also against the Swedish companies, the second reason could be that they act at different markets, segments and aims at different customer categories.

**Answer on Q3**

We have been able to classify the case companies with the help of the chosen strategy theory. This theory gives at hand that a company can be classified as being either a Defender or a Prospector company.

Our case companies have proven to be mostly solely Prospectors when analysing them but with an exception of a Swedish company. This exception is that there are some peculiar findings around this Swedish company, since they seem to behave differently depending on which market they are facing and acting on. But this is also dependent upon the interpretation of the findings and analysis of this company. Our opinion is that the arguments, reasoning and facts that we have presented in the analysis part about the company’s strategy actually holds when looking upon the company’s strategy. This Swedish company do we argue acts on the domestic and Scandinavian markets as a defender, whilst they behaves as a Prospector on newly entered markets that are unaccustomed with the CTL-concept that their products uses.

**A Suggested Theory and a Model for Innovations**

When looking at these answers given above on the research questions and the analysis of the empirical findings and so on aren’t there at the first glance any broader and generally conclusions or statements that one can do about how innovating companies acts and behaves. But if one studies; the answers to the research questions, analysis, arguments and reasoning done a bit more and elaborately there actually is a pattern that can be found. This pattern has given us an opportunity to develop and present a model, build upon these findings presented within this thesis and which will be presented in this part.

The findings and answers given are that the Swedish companies market their disruptive innovation products against industrial markets with the help of the Push-strategy in the beginning, but then alter this into the usage of the Push-Pull strategy when having succeeded at these markets and that these companies are Prospectors. According to Kotler et al does companies marketing industrial goods use the Push strategy more extensively when marketing
products against industrial customers and markets which we argue supports our conclusions\textsuperscript{110}. But since there are also some interpretations that can be done when it comes to the second Swedish case company (Log Max) do we present them here as well. The interpretations which one can do are that the company uses the Push-Pull strategy to market its sustainable innovation product and that the company is a defender company this within the domestic and Scandinavian markets.

When it comes to the Chinese companies the result is that they had different innovations, one was a sustainable one, and the other a disruptive one. The product that is disruptive has individuals and mostly private consumers as customers, whilst the sustainable innovation product has companies as customers. These Chinese companies market their products mostly with help of the Pull-strategy in the beginning but later use the Push-Pull strategy when the products have been established at the market by these prospector companies. Kotler et al writes that consumer goods are mostly marketed with the Pull strategy and by this gives supports for our conclusions about one of the Chinese companies\textsuperscript{111}. The other Chinese company which also uses this strategy might be active within an industry that shows similar attributes as the private consumers markets possesses. Since the customers of this product uses it to give service to both private consumers as well as industrial customers are there ultimately individual users in the end since it is a telecommunication service. Therefore can the product be seen as and classified as being consumer goods and that may leaves the company at no choice. A further reason could be that their product is intangible and there by hardly can be compared with the hardware products that the Swedish companies manufacture.

The summary, reasoning and arguments given above also gives us an opportunity to come up with some hypothetical suggestions and generalizations about how innovating companies acts and behaves which we use to develop a theory and model which is presented in the following pages.

**Strategies for Innovations**

Disruptive innovations aimed at industrial and professional users are mostly marketed with help of the Push-strategy in the beginning, but when they have been able or are about to


\textsuperscript{111} Ibid
disrupt prevailing technology or have been established within a market are they mostly marketed with the Push-Pull strategy.

Disruptive innovations aimed at individual users and private consumers are mostly marketed with help of the Pull-strategy in the beginning, but are later when they have won market shares and have been able to consolidate within markets are then mostly marketed with help of the Push-Pull strategy.

Sustainable innovations that are aimed at individual and private consumers or at companies ultimately using these products to leave service to these consumers, or products that are intangibles, are mostly marketed with help of the Pull-strategy in the beginning but later when they have won attention and are established are they marketed with the Push-Pull strategy. Companies innovating, developing and producing these disruptive and sustainable innovation products are Prospectors.

But how does this fit with the case company Log Max then, since their product could be classified in two different ways? As we earlier have shown can their product be seen as a disruptive innovation when marketed at markets not being as technically mature and accustomed with the CTL-concept as the Scandinavian and domestic markets are. When the product is classified as being disruptive seems the model to hold, but what about when the product is to classify as sustainable? Then the company uses the Push-Pull strategy already from the beginning which should imply that the theory and model doesn’t hold. The answer to this is that their product already earlier had been established and also had disrupted earlier prevailing technology within the Scandinavian and domestic markets. This since the company manufactures a product that already earlier had been invented and marketed by some other companies and by that already existed and was established within these markets. As a consequence of this the company can already from the beginning use the Push-Pull strategy within these markets which we have proven that they do.

How about the strategies? In the theory chapter we wrote that a company can’t be a Prospector and a Defender at the same time since those strategies are mutually incompatible. We absolutely agree with that statement and believe that it is true, but we argue that this statement only is true when looking upon how a company acts and behaves at a single market or in several markets that are at the same technological maturity level accustomed with the
technology a company has to offer. Since the case company Log Max is active within several markets that aren’t at the same technological maturity level and who neither are accustomed with the technology the company has to offer do we argue that the suggested model actually will hold.

When a company has succeeded with their innovative product and has reached the stage when they uses the Push-Pull method then they must make a strategic decision. The decision which they ultimately must make is whether the company should continue as a Prospector or a Defender. If they choose to continue as a Prospector then they must start all over again. Otherwise they must continue as a Defender and defend them self with the help of the Push-Pull strategy. Then the question arises how this will affect our case company Log Max since they are at two positions at the same time? Probably will eventually the main part of their different markets reach the same technological maturity level and at that stage the company must make the decision whether they shall be a Prospector or a Defender.

If the company finally would chose to continue as a Prospector instead of being a Defender then they could sell of their product series and patents they possesses to another company and at the same time try develop a new innovation. This may seem a bit peculiar and unknown for someone who aren’t familiar with how companies acts and behaves or that haven’t meet this kind of activities earlier, but this happens rather often within and amongst industrial companies. Subcontractors can sell an entire product concept or a patent to a customer or a company can chose to buy a patent or even a whole range of a product series from a competitor and this may gives a selling company opportunity to change their future strategy. All these arguments and reasoning given above strengthen our opinion that the theory and the model holds.
The suggested model can be graphically displayed and described as in the figure below.

![Diagram of the strategic circle for innovations]

**Figure 4:** The strategic circle for innovations

**Suggestion for Future Research**

Our suggestion for future research is of course to study the Theory and the model we have developed further more. The theory and the model might need to be more elaborated and
further developed since we have been working within a rather narrow time frame but also with a delimited amount of case companies. It would be very interesting to see what might comes out in the end of further research, but hopefully have we been contributing to science somehow and to some degree anyway.
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**Telephone Respondents**

John Danielsson, Former sales and marketing executive, Hörnell International AB

John Danielsson, Market Executive, Log Max AB

Deng, President, Xerxes

Wang, Marketing Manager, ZTE
Appendix 1

General Questions:

Questions on Innovation

1. What kind of invention/innovation have the company developed?
2. How did the idea of the invention arise?
3. How was the work around the innovation arranged?
4. How many were involved in this arrangement?
5. How would you describe the innovation?
6. What is the difference against existing products today?
7. How is the performance of the product in comparison with the competitors’ products?
8. What features differs on the innovation against existing products?
9. What values does you’re innovation got that differs against other products?
10. Do customers of your innovation differ from the customers of other existing products in some way?
11. What would you say is the biggest differences between your products against competing products?
12. If you speak freely about your product what would you then say or mention?

Questions on Marketing (Push & Pull)

1. How does the company introduce innovative products to the market? Do you prefer advertising and sales promotion to attract end customers or personal selling and other methods through retailers and wholesalers to the end customers?
2. Does the company have local agents to market the innovative products or does the company contact the end customer directly?
3. What do you think are the factors that should be kept in mind when you market an innovative product?
4. What do you think of the future market of the company’s products?
5. Do you find the present marketing strategy methods reliable for future expansion?
6. How is the company handling the present situation in the market?
7. What obstacles or changes have the company meet, or had to do, when introducing new products to the market?

*Questions on Strategic Positioning (Prospector & Defender)*

1. Do you see any new markets and products expansion in future or any prospective opportunities?

2. How does the company do in order to enter, sustain and grow in the market?

3. Why did the company decided to enter into foreign markets rather than to remain at the local market?

4. How is the company positioned in the market?

5. How has been the success rate for the company’s invented products so far?

6. What lessons has the company learned in European and American markets which could be useful when penetrating further into Asian markets?)

7. How is the company competing in the market with other companies which provide similar products or services?
Appendix 2

Questions to Telephone Respondents at Case Companies

1. What is your position within the company?
2. What does the company manufacture and sell?
3. What kind of invention or innovation has the company done?
4. How did the idea of the invention/innovation arise?
5. Can you describe how the development of the invention/innovation was done?
6. How should you describe the invention/innovation?
7. What is the difference against existing products?
8. How does the product attribute/characteristics and design differ against other products?
9. Seen from the customer's view, what are the benefits/disadvantages with the product?
10. Is there something that differs your customers against the competitors' customers in some way?
11. How have you marketed your products, through advertisements and promotion, or with the help of sellers and resellers (distributors)?
12. Do you have local sellers at each market or do you sell directly to the end customers?
13. What is the look of the future market? (Or: how does the future market appear?)
14. Do you see any new markets or segments for your products?
15. How do you do to enter a market and to grow in it?
16. How have you chosen to position the company on the market?
17. How do you react against, or to meet, competitors with similar products?