Different applications for an innovation

A feasibility study of a business opportunity

Master Thesis in Entrepreneurial Management

Author:  Carl Johnson, Silvina Tejada
Tutor:    Johan Wiklund
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Authors: Carl Johnson, Silvina Tejada

Tutor: Johan Wiklund

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Abstract

Due to the pressure of hyper competitive markets, companies are forced to constantly search for improvements in their range of products and services. The success key is to be proactive and implement strategies that value innovation through business processes and diversification of products and services. The ideal situation is when real added values are offered to customers.

This Master Thesis, as a practice oriented project, analyzes the feasibility of a new business concept “Smart storage”, and aims to identify the existence of a real opportunity. It not only provides a practical solution to a case regarding innovation through product diversification, but also shows the detailed processes that were used to solve it.

There were several phases in the project. The first phase included ideas generation (the discovery of different applications for the business idea); valuable information resulted from brainstorming sessions, focus groups and whishing and bug-lists of creative techniques. It was also necessary to run meetings with the consultant who is working close to the company that wants to launch the new product and the Company itself. Once we come up with different applications, it was necessary to gather information about their attractiveness which constitutes the second phase of the study. In this case we contacted several organizations and information resulted from interviews, internet search, telephone calls, e-mails and observation. The empirical data gathering phase was extremely important for the analysis of the project. Finally, for data analysis and its interpretation, we used the Feasibility analysis framework.

The conclusion points out that there is a great potential for starting a “Smart storage for Stadsarkivet-usage” project with public archive institutions. However further studies should be taken place in order to complete the feasibility analysis.
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1 Introduction

Due to constant changes in hyper competitive markets, companies need to adapt fast if want to survive. In countries like Sweden, it is very difficult to compete with low prices. Therefore, the need to add values to products and services pushes organizations to prioritize knowledge, consider technological advances, search for continuous improvement of business processes and offer customized solutions. The success key is to be proactive and implement strategies that value innovation through business processes and product development.

During the Entrepreneurial Management Master program, issues regarding new products and business development have been some of the key areas. This Master Thesis is a practice-oriented project which aims to provide a practical solution to a case regarding innovation through product diversification. More specifically, it focuses on the discovery and analysis of different applications for a new business concept.

To evaluate its feasibility, including its strengths and weaknesses, we developed a case study on the opportunity recognition of a new potential product. We searched for different areas where it can be used, present alternative uses for product, analyze those possibilities and present recommendations.

The attractiveness of this project is related to the benefits of participate on a real business case. As Drucker (1985) argues, “before getting excited about a new business idea, it is crucial to understand whether the idea fills a need and meets the criteria for an opportunity”. This master thesis will have a practical orientation, and our challenge is to provide a real solution.

In order to protect the real identification of private companies and people, we just used fictitious short-names (i.e., SS, R1, etc).

1.1 Background

The starting point of this thesis was at the Science Park, with an entrepreneur who is involved in the development of RFID in different applications. He participated in several projects and also in the start-up of businesses which core products are based on the mentioned technology. Currently, he is working close to SS, a company interested in launching a new product based on RFID. The technology will be described in greater detail further down in chapter 1.1.1.

SS is a successful growing organization. Since their major threat is related to the simplicity of their products which need to compete in a fairly small market, they look for improving its business by offering not only an attractive portfolio of solutions, but also unique added values to customers. For that purpose, SS’s new management settled a goal which is to constantly look for the discovery and exploitation of new ideas. The company believes this strategy could help to attain sustainable competitive advantages and extend their customer’s portfolio.
SS range of product consists of steel made shelves for different usages mostly for the business market. While half of the products are sold directly to other companies, the other half are sold to resellers like catalogue companies. The ones sold to reseller are standardized and have a longer product lifecycle than the ones sold directly to companies. Products sold directly to companies are mostly customized to meet the customer’s demands, for example painted in a specific colour (Söderberg, personal communication, 2007).

Currently the company developed a new concept. The new business idea was born when the firm recognized an opportunity gap in storage devices and created a new product to fill it. According to Drucker’s theoretical concepts (1985), the firm falls into the classification of “internally stimulated”. However, there is a broad definition of its main characteristics and the new product needs to be analyzed to see in which industries it could offer a real solution. Our main objective is to discover in which areas it could be most required and which characteristics could make it more attractive to customers. The idea needs to be evaluated, in order to see if it meets the criteria of an opportunity. According to Drucker (1985) the idea should be attractive, durable, and timely and anchored in a product that creates value to the customer.

1.1.1 Business concept: Smart storage main characteristics

The idea refers to a movable shelf which controls information over stored products. Being RFID the ground technology, the product consists of an integrated solution which includes software, hardware and a wheeled shelf that moves to the sides. It is thought to offer different benefits like space saving, information control over the stored item and easiness in finding stored items. These broader but main characteristics define the “smart storage” concept as it henceforth called in this thesis.

It is important to note that the product’s design is not specified in a high detailed level, meaning that there is space for modifications. However any update on the design should respect the above mentioned characteristics: shelves mobility and RFID tags for stored items. It also important to note that the software component of the product allows the recognition of RFID tags into an information system. If a sophisticated information system is required for a specific need, it should be considered as a whole project itself.

1.1.2 This is RFID

This will be a brief presentation of RFID, the acronym stands for radio frequency identification (Kelepouris, Pramatari & Doukidis, 2007). The technology uses radio waves to automatically identify objects. There are two different kinds of tags, passive and active. When an object gets a passive tag, this tag stores a serial number and whenever the object is close to a reader, the reader can through the tags antenna detect the serial number and pass the information forward to a computer (Kelepouris et al., 2007). This is called a passive tag and only reflects the signals from the reader. There are also active tags that can send out information to a reader. Active tags are more expensive although they have the possibility to send out information to a reader for up to 100 meters (RFID Journal, 2007). We will concentrate on a system
that involves passive tags as well as the readers, although we will not take the actual technical solution into consideration. We will basically concentrate on whether the product is attractive or not.

It is hence possible to tag objects and without using human interaction get information from them. This characteristic provides a great advantage compared to the bar codes technology, which has been commonly used. Because of this time saving, the latest years RFID has been frequently adopted in supply chain management internal business processes to track goods. Speakman and Sweeney (2006) describes also other areas such as screening passports and access cards, as security of valuable items in stores and also in libraries to keep the control of books and automatically register loans of them. These are just few examples of RFID usage and its benefits. Although all benefits offered by this technology are considerably attractive, the biggest limitation in the past, was the tag’s price, which had to come down for mass adoption (Speakman & Sweeney, 2006). Drucker (1985) writes in “the discipline of innovation” about different sources of opportunity. He describes different changes that generate opportunities in the market. In our case we would consider this as what Drucker (1985) describes as changes in industry and market structures. The changes in technology and price of RFID have made it possible to use it and combine it with old products.

Other limitations could instead be the communication between platforms and different systems (Speakman & Sweeney, 2006).

1.2 Broad definition of the problem

In the following section we present a broad definition of the problem the case is trying to solve. Our aim is to facilitate a clear understanding of the research question stated in section 1.3.

When it comes to the exploitation of new business opportunities, it is often difficult to decide whether to pursue the idea or leave it aside. In our case, the problem basically refers to the uncertainty SS has in regards to the suitability and profitability of the new product they consider to launch: Smart storage. The firm has financial resources for launching it, but they lack human resources for product development. Moreover, SS do not know if the product could help to satisfy customer’s need in any industry or which characteristics it needs to add value to customers. All they have is a general an initial idea, which needs to be worked and analyzed.

1.3 Research questions

We stated the following main research question alongside with two sub questions.

Is it feasible and reasonable to continue with the analysis and evaluation of a new business concept?

To answer this question we searched for new potential applications for the given business concept that could be attractive to customers, solve specific storage problems
and provide a solution to market’s demands. Moreover, we identified potential mar-
kets and the product’s characteristics that could fulfil storage needs.

This is stated with more detail in the following sub questions:

- In which areas, industries, and businesses can the product be successfully
  sold?

- What characteristics should it have to satisfy potential customers?

1.4 Purpose

The purpose of this project is to analyze the feasibility of the innovation and define,
if it is possible, which product’s characteristics could lead to attractive applications
for the new business concept.

1.5 Thesis structure

This section describes the structure of the study. The first and second chapters refer
to the introduction to the case and the theoretical concepts on which the thesis is
grounded on. The third section shows empirical findings. At an initial stage we rec-
ognized potential interested areas where the product could offer a real solution. At a
later phase we evaluated different types of business where smart storage could be
most required or useful. In the fourth section we studied and analyzed the product’s
level of suitability to the customer’s needs and expectations. After scanning the mar-
ket of possible interested customers, we conclude the study in the fifth chapter and
present our recommendations of the most promising ones.

1.6 Delimitations

The project’s focus is to discover attractive applications for the given business idea. In
other words, to find different industries, areas or business in which the product could
offer a distinguished solution. However, technical and design issues are not consid-
ered in detail and are out of the scope of the thesis. Neither it was possible to conduct
a financial feasibility or studies related to cost and selling price. Profit studies, prod-
uct development and detailed specifications should required further analysis.

It also important to note that, due to the lack of time for working in the project, we
could not develop an exhaustive market analysis. To evaluate the feasibility of a given
application (or product for a specific industry) we contacted suitable companies and
did not conduct a formal market analysis. Further studies should be taken place in
order to complete the feasibility analysis of a specific application for the business
idea.

2 Theory and methods
This section describes the theoretical models that were applied in the thesis. These models relate to the generation, evaluation and refinement of business opportunities and to IT developments.

It also presents a general explanation of the creative techniques chosen for ideas’ generation, the Simplex Method for problem solving and the framework used for data analysis.

Because these models, were in fact, tools for carrying out this study, we found it appropriate to present their theoretical concepts and how they were used in an integrated fashion. In other words, we integrated the aspects of a thesis that are usually found under the separate headings of “Theory” and “Method”.

2.1 Introduction to methods

The adopted research strategy was focused on gathering data through interviews, observation, telephone calls and internet research, while data analysis followed the feasibility analysis framework. The results of the study will be the base for a future complete feasibility analysis of the business concept. We present a practical solution to a real case and focus on creativity and data gathering as ways to answer the research questions.

It is important to note that there were several phases in the project. The first phase included ideas generation (the discovery of different applications for the business idea); valuable information resulted from brainstorming sessions, focus groups and wish lists of creative techniques (see a complete description in chapter 2.4). It was also necessary to run meetings with the consultant who is working close to the company that wants launch the new product and the Company itself.

Once we come up with different applications, it was necessary to gather information about their attractiveness which constitutes the second phase of the study. In this case information resulted from interviews, internet search, telephone calls, e-mails and observation. The empirical data gathering phase was extremely important for the analysis of the project. The choice of companies to contact is described in chapter 4.2. At this stage we used an interview guide, in order to get coherent answers from respondents. The interview guide was based on the PRIME framework and the included questions correspond to the product dimension. It is also important to note that interviews were semi structured since we wanted to have open discussions. The developed guide contained the following parts with the main questions in italics:

The first phase of the meeting was to present the business concept and its main characteristics: We Described and presented the Smart storage innovation. The second phase was to ask questions in order to understand how internal business processes are usually done in the organization; this helped us to determine if Smart storage could be used or not: How is the internal storage processes taken place in the organization? Once we got insights on the way they work, we investigated if the business concept could be really used: What is the opinion towards Smart storage? Would it be feasible to use the innovation in that industry? How do the benefits offered by Smart
At a general level, to structure our thinking and produce ideas, we used the Simplex “problem-solving” model presented by Wilson (1997) in an iterative way (described in chapter 2.5). Finally, for data analysis and its interpretation, we used the Feasibility analysis framework (chapter 2.6).

All details are explained in the following sub-sections of the Theory and Methods chapter.

### 2.2 Ideas and opportunity recognition

It is important to understand the difference between a business opportunity and an idea. Drucker (1985) defines opportunity as a “favourable set of circumstances that creates the need of a new product”. Some of the essential qualities and opportunity has are attractiveness and durability and it also offers added value to customers.

An idea, on the other hand, is just a thought, and may not necessarily meet the criteria of an opportunity. Therefore, once an individual came up with a new idea, he/she should evaluate the existence of a real opportunity. The identification of the time period in which it is possible to launch a product to the market is also important, and is defined by Drucker (1985) as a window opportunity.

Both processes of idea generation and opportunity recognition require high levels of creativity. Drucker (1985) argues that creative thinking is an important requirement for the discovery and pursuing of opportunities and should be present during most entrepreneurial activities. Moreover, he defines five steps to generating creative ideas, and is stated as follows:

- The preparation stage, which refers to the experience and knowledge an entrepreneur, brings to a project.
- The incubation stage in which a person comes up with different ideas for solving a problem or different problem he/she could like to solve.
- The insight phase is when the solution to a problem is found.
- The evaluation stage is the period in which an idea is studied and analyzed in order to identify a real opportunity.
- The elaboration stage is when the most important details and characteristics of the idea are found.

In our specific case, the preparation step was taken place by the entrepreneur who discovered the new concept. At the incubation stage of the new business idea this project was born. We thought of different industries where Smart storage could help to solve a storage problem. Since they were typically generated to capitalize an opportunity, it was important for the project to consider different creative techniques. Drucker (1985) argues that techniques stimulate and facilitates the generation of novel
ideas (Chapter 2.3 describes different techniques we used in the project). At the insight phase the solution for the problem was found and the evaluation stage required a viability evaluation for each idea. Finally, at the elaboration stage, some details of the new product were put into a final form.

2.3 Information systems development

Beynon-Davies (2002) defines information systems developments as the science of designing and making information technology systems. He argues that the development process have different stages, which are Conception (in which the key business case for an information system is built), Analysis (which refers to the analysis of existing systems and the establishments of requirements for a new one), Design (or definition of the IT model, which is understandable by programmers and developers), Construction (programming activities, the IT system is built), Implementation (testing and delivery of the IT system) and Maintenance (whenever a change need to be implemented in the IT system).

In our Master thesis, we made use of specific terminology, since we conducted a high level analysis of the development of Smart storage’s software component.

2.4 Creative techniques

2.4.1 Brainstorming

Barringer & Ireland (2004) argue that brainstorming is the process to quickly generate a number of ideas. These ideas should not be analyzed or evaluated while the process is taken place; evaluation should be done on a later stage. In order to generate as many ideas as possible, the atmosphere at a brainstorming session should be positive, inspiring and without judgement, meaning that criticism is not allowed.

In our brainstorming sessions we first focused on what kind of objects could be worthy to store in the Smart storage archive and we had in mind that the benefit of space saving and information control over stored items should add values. We also created a link with the related possible interested industry or business area. At a later stage, we thought on several related ideas to the found ones and considered related industries which could have the same needs: to keep a track on items’ information and have the possibility to reduce storage’s space.

2.4.2 Wishing

Another creative technique for finding new ideas is wishing. This technique’s purpose is to generate as many uncritisized ideas as possible. Nolan (1987) describes wishing as a method where imagination helps to open a person’s mind and allows the discovery of new ideas. The process consists of “wishing that this or that would be possible” to do just to solve a problem; it helps to open the mind towards the unknown. The purpose is to see possibilities instead of threats for the new idea.
When applying this technique, we played the role of people working with storage processes in different industries. Different “wishes” resulted in ideas about how and where to use Smart storage.

### 2.4.3 Bug Listing

Bug listing is a creative technique described by Adams (1987) as a list of things that bother you. In order to generate ideas of what can be solved should one try to find as many bugs as possible in a certain time.

In our case, it was applied in a similar way as the “whishing” technique. Our purpose was to identify problems. We focused on finding industries (or different kind of business) that could have special storage needs or that could possibly experience problems related to the storage of objects. At a later stage, these “bugs” helped to identify possible solutions based on the business concept main characteristics.

### 2.5 Simplex problem solving

The Basadur’s Simplex Process Model for Creative Problem Solving, CPS (Wilson, 1997) was also of great value. Wilson argues that an appropriate solution depends on how well the problem is defined.

The model’s main objective is to guide the problem solving process and consists of four stages, with two activities in each stage.

![Simplex problem solving model](image)

Figure 2-1 Simplex problem solving (Wilson, 1997)

The eight step model is presented as follows:
• Problem finding: This activity consists of sensing organizational present and future problems.

• Fact finding: At this stage, the objective is to make a list of known facts. It basically refers to “What do you know” or “What do you think you know”. It could also be helpful to ask “What do you not know about the issue but you could like to know?”, “Why is this problem”, “What have you thought or tried”.

• Problem definition: Once we find and interpret facts, we should be able to answer “How might we …… for solving this problem? And “How the product might solve the problem?” From the broad problem, we must define a narrow one.

• Idea finding: It is important to let creativity rule. Make a list of wild ideas, related ideas, and transformed ideas by reversing, twisting ideas, etc. Evaluate and select ideas: From the list of total ideas, select the most relevant ones.

• Evaluate and select of ideas

• Planning the implementation: What, How, Who, When, Where

• Gaining acceptance: Is about selling the idea.

• Action. Relates to the implementation itself.

The outcome of the method is a problems’ list (opportunities), the respective found solutions, the benefits and objections of each solution and the way to overcome downsides.

We used the method to have a different outcome and the resulting list referred to ideas on how the product could be used: the aim was to come up with different applications for the new business concept. We applied the method in an iterative way and followed the initial stages of the model. At the problem finding phase we used the creative technique described in chapter 2.4. The fact finding stage was focused on gather information about how different industries work in terms of storage issues (internet search) and what kind of systems are available in the market and currently on use. The problem definition stage helped us to come up with different solutions in order to answer the question of how the product might solve the problem; we used the technique explained in chapter 2.4. At the idea finding stage we came up with different ideas; we clarified those ideas that resulted form the “wishing” and “bug” techniques (described in chapters 2.4.2 and 2.4.3) and applied brainstorming (explained in 2.4.1) to complete the stage. The final list of ideas was evaluated in a meeting with experienced entrepreneurs and the selected ones were further analyzed (the complete list is shown in Appendix B). The last two phases of the model, “Planning the implementation” and “Gaining acceptance” were not considered, since their relevance is not aligned with the purpose of the project.

We found Simplex very interesting since according to Wilson, it has been applied in manufacturing companies for ensuring that R&D teams were designing the “right
products”; in other words, products which satisfy market needs and demands. The author emphasizes the importance of facts finding in the interpretation phase, and the use of those facts to improve our understanding of the problem (or discovery of opportunities).

## 2.6 Feasibility Analysis

Feasibility analysis is the process of determine if a business idea is viable (Barringer & Ireland, 2004). This is done trough a pre study on a potential business idea in order to determine if the opportunity is worth pursuing before any investment is done. There are different ways in conducting the feasibility analysis and we present in the following chapter these models used in this thesis.

### 2.6.1 Fatal flaw approach

A general rule that is used in order to determine whether a business idea is worth working further with is the fatal flaw model (Wiklund, 2006). The model consists of three questions and the rule is to have at least one “Yes” to pursue further with the business idea. This will be the first step used in our feasibility analysis.

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the product/service/business serve a presently underserved need?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the product/service/business serve an existing market in which demand exceeds supply?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can the product/service/business successfully compete with existing competition because of an “advantageous situation”, such as better price, location, etc?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 2-2 Fatal flaw model (Wiklund, 2006)

### 2.6.2 PRIME framework

Human, Clark, Baucus and Eustis, (2004) present a framework as a complement and extension to the models used nowadays. The model covers different dimensions but we only concentrated on Product and Market (marked in grey in figure 3-3), since they were the most suitable for the case. The excluded ones relate to setting up a team and gaining the proper resources for the project. In our case, SS has a good team that will be working with the new product. The resources are also very stable so there is already money put aside in order to finance this new product.

Alongside with the evaluation of the product there is a ranking system for the different evaluation criteria. The criteria range is from the lowest which is double minus (--) via single minus (-), zero (0), single plus (+) to double plus (+++) which is the highest value to be given to a criteria. Basically as Human et al. (2004) describes that while
the double plus is when the product have a major competitive advantage, the double minus indicates that there is little chance of success.

![Figure 2-3 PRIME framework (Human et al., 2004) Grey area added to show what we are concentrating on.](image)

**Product**

The PRIME framework considers different aspects to analyze a Product, which are Superiority, Uniqueness, Protection, Ethicality, Readiness and Business model. In our study we excluded Ethicality and Business model since we consider that it is not applicable. The main reasons are basically two: in one hand we do not see ethical issues that could cause problems or that require a deep analyzes at this stage; on the other hand the business model can not be discussed since we first need to know if it is really possible to build a product with the characteristics that customers need.

When it comes to Superiority, the question one can ask is whether the new product is superior to existing products on the market. If the product Uniqueness is high then it is a good sign for success. Human et al. (2004) argues that if a product is unique, there is great possibility to gain competitive advantage over similar products. The third thing to consider is Protection, which refers to the capability to keep that competitive advantage. Different ways of protecting a business idea are licensing or patent and also having key processes or personnel. Furthermore the framework look into whether the product is ready or not, or how long it will take to be launched on the market.

**Market**
Considering the market for a new product the PRIME framework describes Size/structure, targeted customers, reachability, other choices and need/want. Regarding the market size and structure, Human et al. (2004) states that large mature markets dominated by a few big companies are harder to enter than smaller markets. Smaller markets can be easier to approach and reach but they could instead lack potential in financial resources or growth characteristics. When it comes to the customer’s dimension, it is important to know who they are and might be, and how is their specific buying behaviour. Reachability is connected to the identification of customers and the knowledge and ability to reach them.

Other choices refer to the competition in the market, their strength and weaknesses and also what kind of strategies they have.

This framework allowed us to clarify and understand the need for Smart storage in the market and also determine if it could really add values to customers. Human et al. (2004) states that the ground for a successful business is given when the market specifically requires a product. The last thing to consider regarding the market evaluation is the growth prospects. How much will the potential market grow, are there any possible changes that is likely to happen. Could the product be presented in an early change in a possible change? Entering a declining or saturated market will give the company problems to grow. In our case, we did not conduct a complete market/industry study.

2.6.3 Market / Industry attractiveness

Barringer and Ireland (2004) argue that the industry/market feasibility analysis aims to assess the overall appeal of the market for a new business concept. They also suggest that entrepreneurs should keep in mind three important issues when evaluating the feasibility of an idea: industry attractiveness, market timeliness and niche market identification. For the industry attractiveness concern, they present four points to evaluate. The first one refers to growth characteristics, aspect that in their perspective is more relevant than the size of the market, since growing industries are more receptive to new entrants and new products. The second issue to consider is how mature is the market; in this case it is preferable a fairly young rather than an older and mature one. While the third consideration is in regards to operating margins, the last one refers to how crowded is the market. These last two items were not considered in the Smart storage feasibility analysis and should be evaluated in further studies. We basically analyzed the three main issues proposed by Barringer and Ireland: We studied the interest level that different industries or sectors showed towards the new businesses concept. In those cases in which there was an optimistic reaction, we analyzed the industry’s growth characteristics and finally considered the window opportunity for the new idea.

Barringer and Ireland (2004) also present a research classification for data gathering, and argue that all information, on which the analysis is based, should come from different sources. The primary research aims to assess the market attractiveness’ level. In our specific case, in order to determine if there was enough market for the product we got in contact with potential customers and key industry players. Barringer and
Ireland (2004) argue that the secondary research is conducted in order to probe data which was already collected. In this project, we used different sources of information; data came, for example, from web sites, government statistics, industry related publications, etc. Finally, we considered the following questions for evaluating industry attractiveness:

- Is there any realistic place in the industry for a new product?
- Is possible to find a yet underserved market in which the product could offer a real solution?
- Is there any position in the industry that avoids the negative attributes of the industry as a whole?

3 Empirical findings

Empirical data, was produced by experimentation, interviews and observation. While experimentation was taken place for idea’s generation at the initial phase of the study, observation helped to identify how suitable could Smart storage be for potential interested prospects.

Ideas were basically related to where the product could be used and which characteristics (apart from the main ones described in chapter 1.1.1) should it have to fulfil real needs in the market; the objective was to find a “killer application”. For that purpose, we applied different creative techniques (explained in 2.4). Chapter 3.1 contains a description of the idea’s generation stage.

The second phase main objective was to gather data of the customers’ level of interest. It was necessary to get in contact with several organizations. A resume is presented in chapter 3.2.

3.1 Brainstorming, “Wishing”, “Bug listing”

During the first phase we creatively searched for different uses of the original business idea (see Smart storage presentation in chapter 1.1.1); in other words, found products with the main characteristics of the initial concept but tough to solve a problem in a specific area. By applying the creative techniques described in 2.4, we came up with ideas of how it could be possible to use the product in several industries or areas. The complete list of ideas is presented in Appendix B.

From that list, we chose the more attractive solutions. For that purpose we run a meeting in which participated representatives from the Consultancy firm where our contact works(entrepreneur) and from SS (sales developer). The objective of the meeting was to reduce the number of ideas and create a list of the best ones. The process we followed was to ask them to rate every idea. We used 4 evaluation criteria, which were rated from 1 to 5, where 5 was the highest. Criteria were Compactness, RFID usage, Market size and Flaw of items. We considered the three first ones to account in the rating; the last one only indicated usage suitability. The “Evaluation sheet” is presented in Appendix C.
3.2 Contact with companies and evaluation of ideas

The second phase of the study was to evaluate the selected ideas. It is important to note that every idea was related to different ways of using Smart storage in different business areas or industries. There were 6 areas to study: Police, Retailers, Tool rental companies, Jönköping’s komun (Stadsarkivet), Pharmacies and Banks. While experimentation came from the need to talk to several people, observation helped to understand storage problems or opportunities for Smart storage to offer reliable solutions. We visited institutions (public and private) and briefly presented the innovation that we were investigating. A resume of findings is presented in the following chapters.

3.2.1 Initial contacts

In order to gain knowledge on what entrepreneurs with insight in Jönköping’s corporate environments think about Smart storage, we contacted C1 and C2. We chose the former since it is a business development consultancy and the latest, since it is a business which core product is based on RFID technology. Through the contact to C1 we gained a better understanding of different issues which should be taken into consideration in the feasibility analysis. C2, on the other hand, helped us to clarify our understanding of where RFID is or could be used.

C1

C1 is an organization that helps people to start up companies and it currently runs a project called SME development. In order to get a broader view over potential interested market in Jönköping, we contacted T M. Having previous knowledge about SS’s intention to launch the new product, T M expressed that tool-machines rental companies could be potentially interested in the product. He also said there might be difficulties in the marketing of the product since several firms already have their own functional systems. Furthermore he presented a variant for the idea, which basically was about a storage product that saves place and offer the possibility to identify where objects are. A system like this would not use the RFID for identifying each specific object instead just identify the special box or shelf space where the thing are stored.

The outcomes of this meeting influenced over the criteria of choosing companies to get in touch with and the tool rental area looked promising.

C2

We decided to contact C2, since the company adopted RFID as the basic technology for their core products. They offer a complete hardware and software solution for security in construction sites: a container which uses RFID for information control over stored tools or machines. Although the product is based on active tags, they are looking into the possibility of changing to passive tags (An active tag works with a battery which needs to be replaced once a year). In this way, they could increase the product’s quality.
The meeting was held with the CEO and he liked the idea. He mentioned that it could be useful in warehouses for tool rental companies. While C2’s product is used in construction sites, SS’s Smart storage could be used in warehouses. He stated two interesting comments about the product’s design. He said that the combination of metal tools (or machines) with metal shelf’s structure, could interfere with radio waves, causing some problems. He also expressed that an access door to the Smart storage could help to overcome the problem.

The meeting helped us to understand where the potential usage for Smart storage could be found and we decided to get in touch with tool rental companies.

### 3.2.2 Police

This organization was selected, since we thought that Smart storage could be useful for the storage of impounded objects.

We made a telephone contact to L E, who used to work for the secret police force. He thought the idea seemed good, especially to keep track of things. However, since impounded objects have different and various formats, the benefit of movable archives could be questionable. Considering his positive reaction towards the product, we decided to get in touch with more people from the Police force.

The next person to talk to was U S, the head of Halland County. Through a telephone conversation he expressed that it could be useful for the police to have a system that keeps track of everything they impounded. Moreover, he stated that the compactability characteristic could be beneficial. A last important comment was that the police is a big organization which needs to have a congruent system for the whole entity in Sweden. He liked the idea.

Finally, we contacted D C, the chief of “gosgruppen”, a unit that handles goods taken into control by the police. The meeting was held at the Police Station in Jönköping, and through observation we got some insights of how agents work with evidence and impounded property. He showed and explained internal procedures in regards to the storage of that kind of objects. Smart storage seemed to solve some problems, since it could help police officers to save time (it won’t be necessary that they type information into IT systems), control human errors when typing numbers or objects’ codes and it could also save storage space. Jönköping has its own procedures, but follows the general lines dictated by the Headquarter in Stockholm. It was stated that the central office rules over the whole country policies in terms of support systems. For example, they decide which storage system all units would use. Currently they are implementing a new one which uses bar-codes and movable shelves to store impound objects.

The last contact was M, a project leader from the main police office in Stockholm. He expressed that the force decided to implement a system all over Sweden, which purpose is to facilitate the storage and control of impounded objects. It took five years to analyse and design that new system and it involved the reorganization of storage processes and also the development of IT applications.
Although he stated the idea was interesting, he thought it was not applicable for them in the near future for obvious reasons.

It is important to emphasise that this kind of public institutions is very complex when deciding any improvement. Their time frames are not so fast and projects tend to last longer than if they were implemented on other organizations.

3.2.3 Retailers

In order to evaluate Smart storage usefulness for retailers, we decided to investigate storage needs and procedures in different kind of businesses and we contacted key industry players. The objective was to discover if the business concept could offer a real value to customers.

Retailer 1 (R1)

R1 is one of the largest electrical retailers in the Nordic countries. It is currently running business in five countries and has more than 190 stores.

We got in touch with M S, a project manager. He expressed that the company made an investment for a Warehouse Management and Control System. Its name is Satt-Store WMS and uses RFID technology. It basically consists on a complete solution which includes software and hardware and manages all operator functions throughout the warehouse, from goods reception to dispatch. R1 launched a new version of the product on week 17. Although the business concept sounded interesting, Smart storage could not be required in this firm for obvious reasons.

Retailer 2 (R2)

R2 is a worldwide leader in the sporting goods retail market and has more than 4800 associated retailers in 32 countries.

We contacted the warehouse manager at the central storage in Jönköping, who explained that they already have a sophisticated system for warehousing. Although he did not see the need for the product in that area, he saw its benefit for shoe’s storage at local facilities. He gave the contact of a person in that area, PS.

PS thought the idea was interesting especially in those places characterized by limited storage spaces. He expressed that they have started to use compact shelves in a store in Stockholm and they were working fine. Although he showed interest on the saving space benefit, he was not sure about the automatic mobility characteristic. Neither had he seen the benefit of RFID tags on products. He said that it could be hard to motivate the cost for that implementation. In the case of Stockholm, for example, it is usually the same people who manage stock and pick shoes from shelves and so they get used to find products pretty fast.

Retailer 3 (R3)
We chose R3 since they are the leading retail shoe company in the Nordic countries. With the majority of outlets in Sweden, R3 also provides outlets in Norway, Denmark and Finland and has five business divisions.

We contacted a person who is part of the leading. The executive gave us a good insight on how the company works in terms of shoe’s storage and explained that compact shelves were implemented in some of their facilities. That experience was two-folded. On one hand, the space saving benefit was really appreciated. On the other hand, since the flow of gods is kind of intense, it occurred that different employees wanted to use a same shelf at the same time. As a consequence, they decided not to implement them in other places. Regarding RFID, they have been evaluating the possibility to use the technology in their supply chain.

The executive had a positive opinion towards RFID but she did not see the benefit of movable shelves. Smart storage is then, two-folded for R3.

Retailer 4 (R4)

We selected R4, since it is one of the main chains of supermarkets in Sweden. Although the central storage has their own system, we thought that local branches could require storage room for place all stock that is not yet for sale.

In order to gain knowledge about their internal routines and the way they manage stock, we contacted an employee at one of Jönköping locals. She stated that it is very important to for them to keep down the level of inventory. They try to purchase from the central storage, only what they need; therefore, their entire inventory is inside the store and nothing waiting in a storage room. In regards to deliveries, they were usually two times a week from bigger R4 warehouses located in Växjö and Helsingborg. These frequent deliveries made their need for storage very low as well.

R4 does not require any benefit of Smart storage. The way the organization works, and their internal policies regarding orders and product’s storage make our business concept look not appropriate for R4 specific’s needs.

Resumé for retailers

Empirical data showed that there were different reactions towards the product in the retailing area. In some cases opinions were even contradictory, as occurred in R2 and R3 (see analysis in chapter 4.2).

It is also important to note that some organizations already have effective systems to control and manage the storage of gods. Therefore, Smart storage could not really help to fulfil needs.

3.2.4 Tool rental companies

Two important reflections should be taken into consideration at this stage. First, there could be a potential usage for the product in the area. However, some design issues should be analyzed at a later stage, to determine if it is positively feasible to build a product which fulfils real needs. Second, since Smart storage usability should be
evaluated by middle and senior managers, a contact with the “right people” arises as a requirement.

**Tool rental 1 (TR1)**

We chose to contact TR1 since it ranks among Europe’s five largest companies within the industry of construction machinery and related rental services. It operates in eleven countries and 25 depots and its main lines of business include machine and equipment rental, and the rental and sales of moveable buildings. Through a telephone conversation with P B, we presented the product. Initially he found the idea attractive and stated that the possibility to have big shelves to store models could be useful for them, especially if these models can be loaded with machines directly. However, in regards to RFID, he mentioned that the company evaluated the possibility to use the technology before, but as they couldn’t see the benefits to its implementation, they decided to drop the idea temporarily. As agreed with him, we contacted one business unit of TR1 (TRBU1) in Jönköping and met P, the responsible. TRBU1 line of business includes the rental and sales of moveable buildings. Through observation we gained information of how the warehouse stores items. The range of things go from big items, like crystal doors, windows, modules and panels, to medium and small items, like screws, stairs, ventilation pipes, etc, for building up the modules. The smallest and medium items are placed in sheds, while the biggest ones are stored outside the warehouse, covered with tents. She expressed that stock management requires human intervention, since the load of items, to the input of information in IT systems. She stated that only expensive items are codified. There is a stock information system which contains the codes of every item, and manages it information. In regards to the utility of our proposed product, she expressed that it could not suit the warehouse’s needs in that line of business. However, it could be used for some kind of items. She suggested talking to another business unit (TR1BU2).

We did a visit at the facilities of TR1BU2 in Jönköping and met the manager P. He said that the product seemed interesting but he was concerned about movable shelves in a warehouse where the use of forklifts is required; some machines and/or tools are so heavy that should be moved with forklifts. We also got some insights of their internal system to manage stocks. Individual items have a number that is registered in a computer system when someone rents it. He expressed that the stock management system was working fine and they were not experiencing any problem.

After having an initial chat with him we took a walk around the facilities and looked on the shelves where they kept different machines and tools. It was basically four shelves about five meters high and ten to fifteen meters long and were reachable from both sides. Each shelf had wooden pallets. Forklifts pick heavy items placed on those pallets and transport them. While heavy items are placed on upper parts of the shelves, the others are placed on lower parts, so it is easy for employees to pick them up. In regards to the amount of stored products, it is hard to give estimation; however, we got the impression that it was not a big number of products surrounding the whole storage area. There was also a workshop attached to the storage place where machines and tools were repaired.
The flow of products was mostly done through a big door on the front side of the storage area. In that way cars and trucks could drive inside the warehouse and load items directly from the forklift to the shelves.

P expressed that the product could be attractive if forklifts could drive to the shelves where stored items were. This means that the movable shelves rails should be placed under the floor level, so they do not interrupt a forklift on its way. When comes to space saving benefits, since the warehouse was considerable big, he thought the product could not offer an added value.

Another important issue that should be taken into consideration during the design of Smart storage is regarding the mobility of shelves even when there are heavy items stored in them.

**TR2**

TR2 is a local organization. We contacted the CEO, who expressed that the product was not so attractive for the company since its usage could not fulfil any need. He based his argument in the fact that different machines have different sizes, and there are a few machines of each model but several different models. Moreover, many of these machines were bulky which lowered the interest for stuffing them into shelves and they were stored in a big storing hall. The variety includes tools and machines from screwdrivers to lifts.

Resume of Tool rental companies: The idea looked attractive for some of the managers and some others thought that design constraints could lead Smart storage to unsuccessful implementations. Limitations like mobility of shelves that store heavy items could be detrimental for the ability to fulfil requirements, making the business concept poorly attractive for customers. It was not clear the need of the sector for Smart storage.

**Resume for Tool rental companies**

Data gathering showed that there are some design considerations to keep in mind when analysing Smart storage feasibility. This is basically because at this stage, it is not possible to define if the business concept can be built: Importantly, no product developers participated in this thesis. They are the qualified professionals to answer the following questions: Could Smart storage be five meters high and function properly? What about the shelf's mobility when they store heavy items? In the presence of too much steel, could Smart storage be able to provide an appropriate information control?

Another important issue that is not quiet clear is the need for Smart storage. It is not possible to make any final judgement since more companies should be contacted, especially because the possibility to find potential users in the tool rental industry was appointed by representatives of organizations which have experience in the business area (C1 and C2).
3.2.5 Jönköpings kommun

We considered that the kommun could find a storage solution in the product. For that purpose we conducted observation sessions. The first contact was F G, the Näringslivskonsult. Although he was not personally involved in tasks where the product could be used, he gave some interesting recommendations about people that we could contact. He also expressed that the product could be interesting for “Domstolsverket” which is an institution responsible for the storage of Swedish courts documents (keep records from trials, etc).

Domstolsverket

Domstolsverket is a public institution responsible for the storage of court’s documents and we considered the product could be a good solution for their storage requirements. We contacted H K Domstolsverket, the facilities’ responsible. He expressed the institution is using movable archives which were bought at different occasions through “upphandling”. Upphandling means that when a public agency needs to buy something, different companies present their offers. Then it is up to the agency to decide who will get the contract. He then talked about the responsible for the archives in Sweden which is “riksarkivet” the national archive agency. They set the standard for how the archives will be administrated and the work with it will go on. He suggested also suggested to talk to Stadsarkivet.

Jönköpings kommun Stadsarkivet

Another important contact was to the Jönköpings kommun Stadsarkivet, institution that holds historic documents of the municipality. We got in touch with the responsible, Å C, who expressed that stored documents, regarding the city and its people, are of very various types. These could for example be old documents from city council meetings, data of people born in the city, personal files of inhabitants, etc. These personal files could contain childhood healthcare and grades from schools. He also expressed that as an institution that holds documents, it is very important to keep all originals and also explained that there are some rules and regulations for the storage of the documents. In order to gain some knowledge of what they do and how they could benefit from the product, we visited”stadsarkivet”.

On our visit we got some insights of how the institution works and stores documents. We observed the current archive and three people explained some internal processes. There are several areas divided in two different sub-areas. The biggest one is where older documents regarding the city are. Books and documents are stored individually or grouped in folders, and have an identification number. That number refers to the area the item belongs and is also linked to a file that contains information of the type of item, its characteristics, etc. Although this file controls inventory it does not contain information of the physical place where the item is stored. Finding books and documents is totally based on the physical distribution in which items are placed into the archive. Personnel must be careful when storage items trying always to keep order in shelves. However, since employees have experience it was not a problem to find and keep track of them. The above explained numerical codified system helps to handle all material.
We also observed the part of the archive which concerns personal files. These kinds of files are stored according to the date of birth and it follows the social security number. Handling these items could be problematic from different perspectives. First, since there is just an order of birth’s date it is important to maintain the physical location of files. However, if there is a need to place a new file in a specific shelf position but there is no physical space for it, arises the need to re-locate all items that should be stored after it, otherwise the order is broken. The process should be to move all files 1 position and put the new item where it should go according to the birth’s day principle. Second, if the order is broken, it turns difficult or even impossible to find items.

Another discussed issue was the digitalization of the items. Currently they do not see the need of such activity, since paper is a good steady solution and it is very important to keep originals. Their main goal, as an institution, is to store original documents, books and maps. Moreover, it was stated that the scanning process of documents is expensive and time consuming.

An important part of the conversation was when interviewers expressed their willing to have a system which facilitates the control of physical information. That system should be able to control both specific information of items, and also their physical location. In this way it could be easier and faster to put-into and find things in the archive.

They expressed that “smart storage” was interesting idea and were open to receive more information in case a real product is launched. However, it should require the development of an information system to control documents data. It was also stated that the institution has important financial capabilities.

Summary of Jönköping kommun

As empirical data showed, representatives from Näringslivskonsult and Domstolsverket pointed out that Smart storage have potential to fulfil archive’s needs. Moreover, we found out that Stadsarkivet could be interested in Smart storage.

3.2.6 Apoteket (Pharmacy)

Another area where the product could be useful is in pharmaceutics. We considered that characteristics, compactability and information control could facilitate improvements in storage’s processes.

“Apoteket” is a Swedish organization dedicated to the commercialization of medicines and health related products. For gaining information of how the sector works, we contacted DM, the Apoteket’s environment coordinator and conducted an observation session. For the storage of medicines, they are currently using wooden movable shelves. In order to provide good services to customers and assure that the right medicine was given to the right customer, they need to store recipes. These recipes are also placed in compact archives in the local pharmacy. As DM expressed, different pharmacies have different ways to handle them, since some Apoteket send their recipes away to bigger storage facilities and others save them locally. In regards to medi-
cine’s supply, there are two big wholesalers in Sweden who distribute the drugs to each pharmacy.

DM expressed that the idea was interesting and stated that it could be used for the storage of recipes; he thought that the benefits of space saving and information control could be appreciated in this area. However, for the storage of medicines he observed possible difficulties with the tagging of items, since it could be a slow process. Although he liked the benefits of information control, he expressed it was not clear if the implementation could cause more troubles than benefits.

3.2.7 Banks

Since one of the ideas was related to the use of Smart storage in banks, we contacted three of the major banking institutions in Sweden. The initial thought was that the new business concept could be used for the storage of money; the benefits of saving expensive storage space and information control could make Smart storage attractive and useful. Another area that could require movable shelves is the one related to the storage of documents. What follows are the results of the contact with different banks:

B1

We contacted L-Å A, who explained some routines that are taken place at B1 in matters of documents and money storage. Regarding documents storage, he expressed that valuable papers that the bank needs to keep are sent way after one year to a central storage, where it is kept further on. No documents are hence stored at the local bank office for more than a year. Documents are scanned and put into boxes in storage rooms, and later sent to the central storage. When it comes to money storage, he stated that there is very little investment done in safe deposits since some changes will occur in the near future. According to his perspective, banks will not have money in the cashiers, and will only function as small offices. Therefore, banks generally do not invest in safe areas for money handling. Probably this will be moved to special locations in the city, by that meaning both the handling of money and the safe deposit boxes.

He thought the idea was interesting, but he did not see any benefit for the bank’s storage requirements. First, because there are well defined internal processes for documents storage, and second, because there is a new banking trend in regards to money handling, which stops any investment in safe deposit or storage systems. This last important consideration was kept in mind when contacting other institutions since we needed to validate the real existence of that new banking trend.

B2

We contacted HL, the head of the branch in Jönköping, who explained that the product could not currently fulfil any need in the bank and based his opinion on the way internal storage routines are taken place. In regards to money handling, the new banking trend was effectively affecting B2. Therefore, Smart storage could not really be implemented for that purpose. In terms of documents storage, HL stated that
there is a central storage office in the north of Sweden, where all papers are sent after certain amount of time. In this facility they have a Pater noster machine which facilitates accessibility. Another important consideration is that these documents are previously scanned and are accessible online. There are also other documents that need to be kept in the office. The first type relates to documents that employees need to use in their daily activity. In this case, the location and responsibility for working documents relays on each individual, who normally place them in their desks. The second type refers to valuable documents which need to be stored in document’s lockers at the office. There are normally small volumes of this kind of papers. In regards to security issues, HL expressed that they never experienced any problems. Moreover, they do not have troubles with locating papers neither. Finally, he emphasized on the fact that the bank do not store documents that have value itself, unless it is required for daily operations. The new business concept’s usability for document’s storage is not so required at this bank, since internal procedures assure that there should always be small amounts of stored papers. Smart storage benefits do not provide any real value for B2.

B3

When contacting B3, we first verified if the money handling trend was affecting the bank, and we effectively found out that Swedbank is slowly reducing the amount of money in their cashiers. This fact, made us focus on the feasibility to use Smart storage for document’s storage. For that purpose, we made a visit to the Jönköping’s office where we met two employees responsible for the handling of papers, and we got insights on their storage routines. They basically need to keep not only important documents, but also old receipts from cashiers for a period of time of ten years. Receipts are stored according to their dates and after 10 years, they throw them away. In contrast, important documents are sent to central storage places. The area had a responsible who is the only person allowed to handle documents. In the meeting he expressed that the bank could not make use of Smart storage, since the routines in the bank were clear and simple, and it was easy to find things and keep control over them.

Summary of the Banks

To sum up, empirical data showed that there are similarities in the way banks handle documents. Two of them, scan and send papers away to central storage facilities after one year. The other Bank had a different procedure as described above. In any case, it is not clear that Smart storage could provide any value, since there is no real need for it.

4 Analysis

The purpose of this section is to analyze empirical findings. By using some dimensions of the PRIME theoretical framework presented in chapter2.4 we evaluated the feasibility of the innovation and all selected ideas were analyzed. We followed the SUPERB acronym for Product Evaluation presented by Human, et al. (2004) in their
publication “Idea or PRIME opportunity? A Framework for evaluating business ideas for new and small ventures”.

There are four important considerations that guided this phase:

We first evaluated how the idea looked like. The used criteria followed the “fatal flaw” approach presented by Wiklund (2006) and it helped us to understand if it had sense to continue with the product and market analysis. It is important to remember that every selected idea referred to the usage of Smart storage in a specific business area or industry; therefore the reference to Police, Retailers, Tool rental, Kommun, Apoteket and Banks. The following chart is a resume of the evaluation of ideas.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Passed the Fatal Flaw initial evaluation?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Police</td>
<td>Yes</td>
</tr>
<tr>
<td>Retailers</td>
<td>No</td>
</tr>
<tr>
<td>Tool rental</td>
<td>Yes</td>
</tr>
<tr>
<td>Stadsarkivet</td>
<td>Yes</td>
</tr>
<tr>
<td>Apoteket</td>
<td>Yes</td>
</tr>
<tr>
<td>Banks</td>
<td>No</td>
</tr>
</tbody>
</table>

Second, we focused on the Product feasibility analysis. The industry feasibility was covered only partially and a complete market study needs to be developed. To analyze the market attractiveness we used different sources of information. The primary research was conducted in the data gathering phase explained in chapter 3.2 and resulted from the contact to potential customers and key industry participants. A secondary research was taken place in order to probe data that was already collected. At this stage we conducted internet search to find information about different storage systems available and used by the studied areas.

Third, we considered that Smart storage had different characteristics for different uses (different industries could make use of the product in different ways). This is due to the existence of different target markets and special features the product need to have to offer added values. We defined different business concepts in those cases where the analysis of the idea resulted positive (in other words, where the idea could lead to a killer application) and we based our reasoning in the fact that it had no since to define a business concept when it was not clear the potentiality of the idea.

Finally, it is important to note that the main characteristics of the product were explained in chapter 1.1.1, while in this section we focus on the differences.

PRIME resume

The following summery represents all results of the evaluation of each idea. We used the Product and Market dimensions of the PRIME framework and their results are...
represented in separate charts. The first chart relates to the Product feasibility analysis and shows a rating of different aspects: Superiority, Uniqueness, Protection and Readiness; a complete description is found in the following chapters of section 4. The second chart refers to the Market feasibility analysis. Considering we did not conducted a complete Market study, the showed rating is just for giving an initial idea of the market’s potential.

It is important to not that the analysis of these dimensions were conducted only for those ideas which passed the first evaluation phase: the fatal flaw framework. Finally, the notation follows the PRIME analysis rating system (Human et al. 2004) presented in chapter 2.6.2.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Product PRIME analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Superiority</td>
</tr>
<tr>
<td>Police</td>
<td>++</td>
</tr>
<tr>
<td>Retailers</td>
<td>NA</td>
</tr>
<tr>
<td>Tool rental</td>
<td>+</td>
</tr>
<tr>
<td>Stadsarkivet</td>
<td>++</td>
</tr>
<tr>
<td>Apoteket</td>
<td>+</td>
</tr>
<tr>
<td>Banks</td>
<td>NA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Industry</th>
<th>Market PRIME analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Size and structure</td>
</tr>
<tr>
<td>Police</td>
<td>+</td>
</tr>
<tr>
<td>Retailers</td>
<td>NA</td>
</tr>
<tr>
<td>Tool rental</td>
<td>NA</td>
</tr>
<tr>
<td>Stadsarkivet</td>
<td>+</td>
</tr>
<tr>
<td>Apoteket</td>
<td>+</td>
</tr>
<tr>
<td>Banks</td>
<td>NA</td>
</tr>
</tbody>
</table>

NA: Not applicable.
4.1 Police

The following section is based on the empirical findings explained in chapter 3.2.2.

4.1.1 Fatal flaw

To first see whether it is worth working with the police idea we applied the fatal flaw model. All three answers are showed in the chart and explained later:

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the product serve a presently underserved need?</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Does the product serve an existing market in which demand exceeds supply?</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Can the product/service/business successfully compete with existing competition because of an “advantageous situation”, such as better price, location, etc?</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

The findings showed that business concept could serve a need that the police have in regards to the storage of impounded goods and evidence. Smart storage, through the information control benefit has the potential to add values to this specific customer. However, the demand does not exceed the supply. In relation to the final question, we consider that the business idea has the required features to compete with the existing solutions used today.

Having this in mind, we saw the need to continue with the Smart storage feasibility analyses.

4.1.2 Product analysis

Smart storage characteristics

Smart storage will have the main characteristics described in chapter 1.1.1. A special requirement in the software component is the ability to connect to the Police Information System that handles impounded objects. In terms of physical characteristics, the size should be little bigger than common books’ shelves, so different sized items could be stored.

Product feasibility analysis PRIME framework

Regarding Superiority, Smart storage has the potential to differentiate from other products in the market because of its ability to track objects’ information automatically. This automatic functionality provides real values since: First, employees would be able to save the time used for typing data into computer systems whenever an object is placed in or out of a shelf. Second, since employee do not need to type codes, it is possible to eliminate human errors when introducing information into the system. Third, it could facilitate internal storage’s processes and objects could be easily found.
In regards of **Uniqueness**, the combination of RFID, hardware and software has not been developed before. There are other products on the market which are using barcodes and have a similar function. An important difference comes from the fact that human interaction is required whenever an object is placed in or out of its place, since they need to be scanned. Moreover, securities issues are the second difference; while Smart storage registers automatically any item that leaves its place, barcodes systems leave space to mistakes in the registration (intentional or unintentional) and lost objects.

In terms of **Protection**, eventual patents would help to protect the product from being copied.

The Smart storage **Readiness** should be considered during the product design phase. However, a fast estimation made by an RFID expert (Davila García, RFID developer personal communication, 2007) indicated that it could require six months approximately.

**Smart storage benefits**

The benefits for the Police are basically provided by the software component of Smart storage since it would allow an easy and secure information control over important goods. Easiness comes from the automatic function of reading and registering information every time an item leaves or returns to its shelf. Security comes from the fact that the registration is always done; the reader always update information when an object is moved in or out of its storage place.

The other benefit is the Smart storage space saving feature, which allows the police to hold almost twice as much goods when using Smart storage instead of using ordinary shelves.

**Smart storage drawbacks**

The price could probably be a draw-back for Smart storage. The Police can not afford to pay even bar-codes readers.

### 4.1.3 Market analysis

In regards to the market **Size**, every county in Sweden (21 counties) has at least one big police station.

The **Targeted customers** are Police offices that need to handle confiscated goods.

Considering **Reachability**, it could be necessary to approach the head office at Rikspolisstyrelsen in Stockholm, since they are the ones who decide over the implementation of support systems.

Regarding **Other choices**, there are other actors on the market who offer similar products. Currently the Police is implementing a new computer system designed to manage information of impounded objects. They have also implemented movable shelves for storage space saving.
In terms of a real *need* for Smart storage, the police might not be interested since they are currently implementing another system. This large organization is characterized by taking some time to decide over any adoption of support systems. However, they might be interested in integrating their storage places with IT systems in the future. Therefore, the market might exist in the future, rather than today.

Finally regarding *growth prospects* this market is quite stable since the number of police stations is stable. Due to centralization, it is possible that the number of offices dedicated to the storage of items, could decrease. However, an increase in population could create the need for products that allows space saving and information control, like Smart storage.

### 4.2 Retailers

The analysis is based on the empirical data gathered from four different types of retailers stated in chapter 3.2.3.

#### 4.2.1 Fatal flaw

In this chapter we present the fatal flaw evaluation, which helped us to decide whether to continue or not with the feasibility analysis. The following chart shows the answer to three important questions of the model:

<table>
<thead>
<tr>
<th>Retailers</th>
<th>Yes</th>
<th>No</th>
</tr>
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<tbody>
<tr>
<td>Does the product serve a presently underserved need?</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Does the product serve an existing market in which demand exceeds supply?</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Can the product/service/business successfully compete with existing competition because of an “advantageous situation”, such as better price, location, etc?</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

According to the findings, it is possible to argue that Smart storage do not serve a presently unserved need. All of the respondents were negative towards the idea in some way and the contacted companies showed contradictory opinions. One of the shoe retailers explained that they were not implementing movable shelves anymore since they were causing troubles. The other said movable shelves were giving good results, although they were sceptical towards the electronic shelves and information control for costs reasons. Having this in mind, it is possible to argue that there is not a real need in the retail industry.

Furthermore, internal policies of stock supply impact negatively on the need to keep inventory placed in Smart storage and therefore, its need reduces and almost disappears. Companies intend to reduce their stock as much as possible. The food retailer, for example explained that they had almost no stored stock placed in storage’s rooms.
They were generally negative towards keeping inventory or having “sophisticated” storage’s areas.

Regarding the second question, we did not observe that the demand of this kind of product could exceed supply.

Finally, in the third question, nothing pointed to any advantageous situation which could lead to superior benefits for Smart storage.

Since we found negative answers in the fatal flaw model, we did not conduct a further feasibility analysis.

4.3 Tool rental companies

The following section is based on the empirical findings explained in chapter 3.2.4.

4.3.1 Fatal flaw

The reaction towards the product in the market was contradictory. We applied the “Fatal flaw” method (Wiklund, 2006) and concluded in the following considerations:

<table>
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<tr>
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<th>No</th>
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<tbody>
<tr>
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<td></td>
<td>X</td>
</tr>
</tbody>
</table>

First, empirical findings showed that although Smart storage could not really serve a current storage need for customers, opinions from entrepreneurs indicated that the idea was promising. This duality pushes us to consider two perspectives. In one hand, there is a positive perspective from experts, who have been working in related business for some time, and have knowledge of the area’s needs and opportunities. On the other hand, there is a poor positive reaction towards the product from the customer’s side. However, it is important to keep in mind that only a few companies were contacted and it is not possible to generalize the consensus of a whole industry based only on the opinion of a few players.

Second, according to the gathered data, demand’s levels could be low.

Third, it was not possible to identify any advantageous situation that could turn Smart storage in an attractive solution for the industry.

The fatal flaw indicated that a product analysis could be helpful for the identification of reasons for which the product is not yet attractive to customers. It could also help
to define the Smart storage’s concept in a lower detail level, in order to better understand its traits and draw-backs.

4.3.2 Product analysis

Smart Storage characteristics

In addition to the main characteristics described in section 1.2.1, Smart storage’s design should include the following traits. First, the software component that facilitates RFID information control should be linked to the Stock Management Information System. Second, shelves should be placed on rails situated under the floor’s level and their size should be as common warehouse’s shelf’s size. The main reason that justifies this characteristic is that items that need to be stored have different shapes, sizes and weights and normally, lifting machines help to move the heavy ones.

Product feasibility analysis, PRIME framework

Smart storage Superiority, comes basically from the two main characteristics which are space saving and information control. The former has an immediate financial consequence, and it is basically related to the need of smaller storage areas; the possibility of reducing the size of warehouses locals could provide an extra value to organizations which have several branches and rent several warehouses. The later superiority reason refers to the benefit of automatic information control over rented tools and/or machines. Thanks to the RFID technology, immediate system recognition would be taken place as soon as an object is placed in or out any shelf. Moreover, the link between Smart storage software component and the company’s Stock Management Information System could facilitate data control and speed the process of transaction’s registrations. This superiority can not be quantified on a meaningful dimension to potential customers unless companies decide to re-define policies and re-structure their warehousing internal business processes, in order to save resources. Examples of this strategic change could be:

- Reviewing local rent policies for each branch: The physical space required for a warehouse could decrease importantly, bringing the possibility to rent smaller places.

- Re-organizing internal storage processes to speed up the information control over tools and machines. The use of RFID tags on objects would allow an automatic detection every time the item is moved from its location through the warehouse’s door. Personnel should only introduce data about the rent transaction into the computer system (like Customer name, day of the transaction, etc).

The product could be useful for an organization which aims to change strategies in order to save financial resources.

The Uniqueness of the business idea comes from the automatic location functionality, which benefit is reinforced by the link to a Stock management information system.
This characteristic allows and facilitates the follow-up of every stage in which the item goes through.

When it comes to Protection, it could be appropriate to patent the electrical part of Smart Storage and also protect the software component author’s rights.

Finally, in regards to its Readiness, a beta version of the product’s software component could be done in two-three months (according to the opinion of an RFID expert: Davila Garcia, RFID developer, personal communication, 2007) while the electric movable shelves’ development could require three months (it should be analyzed by qualified product developers). If all tests go fine, a final version could appear in five months.

**Smart Storage benefits**

The major benefit that Smart storage offers is the possibility to reduce warehouse’s local areas, which directly impact the organization’s finance in a positive way. Moreover, the benefit of information control over tools and machines allows a faster and precisely control of stock.

**Smart Storage draw-backs**

There are basically two aspects of Smart storage that are still not enough clear. The first one is related to the product design and its technical characteristics: experts and developers should decide whether it is possible to build a movable shelf placed on under-floor level rails and capable to store heavy objects. Moreover, it should be necessary to consider if RFID works properly when so much steel is present: steel shelves and steel machines or tools.

Second, it is not clear that smart storage serve’s a current need in the market. Further studies should be taken place in order to investigate if and how the product could be welcome in the area. In a case the decision to launch the product is positive, it will be necessary to create a need in the customer to buy the product.

**The opportunity for Smart storage**

The increasing trend of using RFID technologies pushes solutions providers and customers to be open to new opportunities and products. In our specific case, tool rental companies and their way to operate could be influenced by the benefit of radio frequency identification in their internal business processes. It is important to consider, that other related business areas have started to adopt RFID solutions in their operations, Construction companies are a good example. The opportunity for Smart storage in the market comes from the fact that there is no current supplier of such a product. Therefore, the possibility to be first mover could facilitate all advantages needed to differentiate from competitors. It is possible to create a need in the area for Smart storage, since the combination of RFID and movable shelves could add values to customers.
4.3.3 Market analysis

We did not conduct a market analysis, since some design characteristics should be previously evaluated by qualified developers in order to see if it is possible to build a solution according to customer’s needs. Further market research together with a conscious product development study could open the possibility to clarify the feasibility of the idea.

4.4 Kommun, Smart storage for Stadsarkivet

The following section is based on the empirical findings explained in chapter 3.2.5.

4.4.1 Fatal flaw

Empirical data showed that the reaction towards the product in the market was fairly positive. We followed the “Fatal method” presented by Wiklund (2006) to get to the following considerations:

<table>
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</table>

First, after data was gathered, the first impression we got was that the product could serve a presently underserved need.

Second, we realized that Smart storage could serve a market in which demand could be considerably important. Moreover, there are no Swedish suppliers who offer products with similar characteristics: hardware and software. Although some of them sell movable shelves, they do not offer any software application designed to facilitate physical location of items.

Third, the advantageous situation comes from the benefit provided by the software component.

All answers indicated that it had sense to start with the product and market feasibility analysis.

4.4.2 Product analysis

Smart Storage characteristics
In addition to the main characteristics of the product described in section 1.2.1, Smart storage should have special characteristics. The software component of the product will recognize the physical location of objects and it should either be linked to the Archive Information System that controls stock, or manage stock itself. In any case, Smart storage should transparently facilitate information management and data control. The final user should be able to easily locate documents and read or update its information.

When it comes to shelf’s characteristics, there are no special requirements. Normal size of movable steeled shelves is enough to fulfil the archive’s requirements.

**Product feasibility analysis, PRIME framework**

This evaluation intends to get to the heart of the business concept’s opportunity recognition.

The first aspect we studied is Smart storage *Superiority*. Considering that currently, there is no such a sophisticated system capable to facilitate the location of stored items in an Archive, manage its stock information and provide of smart movable shelves, it is possible to argue that the product is importantly superior. This superiority can be quantified on a meaningful dimension to potential customers, since there is a great need in the area to improve storage’s processes. In one hand, information control of physical locations could help to minimize resources in terms of time; people could easily find items wherever they were stored. On the other hand, it is possible to save time spent in the re-allocation of items; employees do not need to move items when shelves are full. Moreover, people do not need to keep strict order in the shelves. An evaluation of sustainable competitive advantages of this integrated product could be highly positive.

The second analyzed aspect relates to Smart storage’s *Uniqueness* which comes from the software component offered benefits. The combination of hardware and software facilitates benefits of space saving and information control over physical items, which make the product considerable unique.

The third aspect refers to Protection. In order to prevent competitors from copy the idea, the product could require protection, especially for the software component. It could be of the interest of the company to patent the electrical part of Smart Storage as well.

Finally, regarding Smart storage Readiness we considered the following reasoning: Since the business concept offers a “hardware and software” solution to customers its readiness depends on several factors. The software component of the Smart Storage creates the need to consider the participation of IT consultant(s) as part of the development team. They are qualified to decide on which is the best way to proceed with the stock management information system. There are basically three alternatives for its development: develop the application in-house, include an existing product that satisfies customer’s need from the market and integrate it to the Smart Storage system or simply advice the customer which product to use for stock management purposes. Attention should be place in software compatibilities. As soon as the team of consult-
ants is established, it will be possible to define an approximate time needed for the whole system development.

If the decision to develop the stock application is positive, it will be necessary to consider time for the design, codification, testing and implementation of the IT system.

Having all these considerations in mind, it is not possible at this stage, to estimate the needed time for start receiving revenues. The business plan does not exist yet.

**Smart Storage benefits**

There are two major problems that Smart storage helps to solve.

First, it reduces the need of typing information whenever an item leaves or return to any shelf. Archive institutions are mostly working with codified systems where everything is written by hand, which mean a daily commitment of two main resources, time and personnel. Anytime an object is placed from or to any shelf, personnel should write down the information into the Archive’s system, which is partially computerized. This first problem could be solved by a system that facilitates and speed the process of information control over stored items. RFID could help to avoid manual input of information. By scanning all objects from the Archive it will be possible to automatically maintain information control and human interaction would not be required for typing data whenever an object leaves or return to a shelf.

Second, it facilitates information of the physical location of items. In order to keep manageable the process of finding items, Archive institutions have internal procedures that require certain kind of storage order. In this matter, the problem starts whenever an item must be stored in certain location of a shelf but there is no physical place for it. Personnel should put the object in its new place, and move all items located to its right, at least one position. The way Smart storage offers a solution to this problem is through the automatic location of items wherever they were stored. With this functionality, objects do not need to be stored in any specific place and personnel do not need to expend time re-organizing shelves.

Having these two considerations I mind, it is possible to argue that Smart storage matches customer’s needs. It could be seeing as an attractive and required product since its major benefit comes from the possibility to save resources in terms of time and personnel.

**Smart Storage draw-backs**

The design and implementation of an IT application that manages stock information should be considered as a whole new project and must face specific risks of IT developments. The negative side comes from the size and scope of the project; the bigger the project is, the more complex it becomes.

If the system does not include the software for stock management, the solution offered to the customer would not be complete. For overcoming this issue, and in order to deliver a product that the customer requires, it could be necessary to find an externally developed information system ready to link the Smart Storage software com-
ponent. All these kind of details should be analyzed by the team of developers when the project starts.

**The opportunity for Smart storage**

Currently, there is a positive opportunity for Smart storage in the market since the product could help to solve important problems. Although the part of the system that refers to movable shelves is not completely innovative, the software component could provide all added values that a customer needs. RFID and information control over physical location of items become the success key and an immediate development could give a first mover advantage.

### 4.4.3 Market analysis

The first aspect we studied is the **Size** of the market. Stadsarkiv is a special institution, in which original documentation about municipalities is stored. There are 21 Stadsarkiv in Sweden (Släktportalen, 2005). Apart from this specific kind of archive, there are also other types of archives concentrated on different types of publication at several locations all over Sweden (Riksarkivet, 2007).

It is possible to argue that the market looks fairly attractive since some of these archives, if not all of them, should keep original documentation.

The second aspect was **Reachibility**. It is important to consider that Sweden has as many StadsArkiv as counties. Although it is possible to reach them all, an initial contact with Jönköping could open the door for the product. By initiating a project with that kommun, it could be possible to develop it and later, offer it to the rest of counties. Once the product is completely functional, it could also be easier to show it to the main institution in Stockholm for its evaluation.

The third aspect was the existence of a real **Need** in the market. There is an imperative need in the area for a product such as Smart storage. The integrated system will be designed to fulfill specifics requirements.

**Market attractiveness**

To analyze the market attractiveness we used different sources of information. The primary research resulted from the contact to kommun institutions and key archive’s personnel. At a second stage we conducted internet search to find more information about the quantity and location of Stadsarkiv in the country.

We based the analysis on the following considerations:

First, we evaluated the market’s size and accessibility. As expressed in chapter 4.4.3, findings show that the size of the market is considerably attractive and there is a realistic opportunity for the product to enter. The possibility to start business relations with one institution means the possibility to enter the whole market if positive outcomes result from the project. Satisfied customers could be the presentation letter of the product to the rest of 21 Stadsarkiv all over Sweden. Moreover, there are grate possibilities to extend Smart storage to other archives in the national territory.
Another important consideration arises if we only focus on Stadsarkiv institutions. Although the number of organizations will not grow, the number of documents which need to be stored will increase, fact that could push archives organizations to search for products designed to fulfil their requirements. Thus, first movers will benefit from these market needs and it could be easier and faster for them to reach customers. Moreover, the time spent in designing a product with special characteristics and the gained knowledge on how to satisfy customers could mean a source for sustainable competitive advantage.

When it comes to operating margins, it is not possible at this stage to do any estimation. The cost of the product should be calculated by the team of developers and later analyzed to set the selling price. Smart storage should be affordable for customers and profitable for the supplier. The financial feasibility analysis is extremely important and will help to make the final decision over the launching of the product.

Finally, the possibility to establish long-term relationships with customers adds to the business extra benefits. Since the software component of Smart storage will require maintenance, the link between client and supplier (in our case, the company that wants to launch the product) should be considered as an on-going process.

4.4.4 Concept statement

Since we found indicators of the existence of a potential “killer application”, we elaborated the following Concept Statement, which could also be referred as to “Executive summary of the business idea”:

Product

Since SS’s new strategy is focused on innovation and customer’s added values, the idea of Smart Storage came from the intention to find a novel solution that best fits storage requirements.

Smart Storage is a movable shelf that keeps information control over stored items. The business concept is based on the idea of steel shelves which moves to the sides thanks to wheels. Every compartment in the shelf has an RFID tag which allows the recognition of any stored item. Items are also tagged with RFID and this facilitates information control over individual item.

The use of this technology provides two major benefits. First, it facilitates and speed-up the process of finding any item placed in the shelf. Second, it is possible to save almost the half of the space than when using fixed shelves.

These added values were thought to facilitate stock management of delicate or expensive objects.

Target market

The target market is focused on Archive’s institutions. Due to the growing need of keeping original documents of individual Swedish citizens, these kinds of organizations sooner or later will require the incorporation of sophisticated systems designed
to manage stock information. We define stock as all documents that need to be stored.

Positioning relative existing alternatives

The use of mechanical movable shelves is currently on use in Archive institutions, which means that there is competition in the market. However, electronically features and the use of RFID technology still remain un-explored. Added values that come from the software component make Smart storage a useful product.

How to be sold and distributed

Special formalities should be followed in order to position the product in the market especially when it comes to Stadsarkiv at a national level, since they are the ones who decide over which system to use.

However, individual institutions are able to decide their own systems for specific areas, like those regarding the storage of personal information of citizens. In this case, a personal approach to different Stads Arkiv could let the product be known. There is a considerable possibility to reach as many organizations of this type as counties exist in Sweden.

Special feature

The great advantage of Smart storage comes from the benefits of computerized physical location of documents and archive’s mobility. The automatic functionality of information control is clearly the most advantageous characteristic that makes Smart storage desirable and useful.

4.4.5 Concept testing

With the purpose of validate the product’s attractiveness, we contacted potential customers and also observed how people work. We explained the concept and the feedback we received was highly positive. It not only helped us to define the product’s characteristic but also detect a real need. In the interview conducted at Jönköpings Stadsarkiv it was stated that further negotiations should be taken place in order to formalize the intention of the company to start the project and provide with the Smart storage to the institution. Although potential customers are interested, their intention to purchase should be analyzed at a later stage.

4.5 Pharmacy

The following section is based on the empirical findings explained in chapter 3.2.6.

4.5.1 Fatal flaw

The following section describes the results of the fatal flaw study.

| Pharmacy | Yes | No |
Regarding the first question, we believe that the Smart Storage could serve an underserved need to some extent. It could be useful for the storage of prescriptions and as described in the empirical findings this is an important part of the pharmaceutical work.

However, demand does not exceed supply. Since there are no similar products specifically designed for the storage of prescriptions and/or medicines, it could be necessary to create the need in the market.

The last question is two folded in our opinion for two main reasons. In one hand, costs could create a disadvantage. On the other hand, Smart storage could enhance security and easiness in the process of prescriptions handling. It is possible to argue that its implementation could mean an advantageous situation for Apoteket.

Since we found two YES in the fatal flaw study, we continued with further analysis of the idea.

### 4.5.2 Product analysis

#### Smart storage characteristics

Apart from the main characteristics of Smart storage, the product should have the following attributes: The software component should be able to be linked to the Pharmaceutical Information System for Stock control. The physical design of shelves should not be special and its size should be as normal book-shelves.

#### Product feasibility analysis PRIME framework

Regarding *Superiority*, Smart storage has the ability to provide security and easiness to the process of prescriptions’ handling. The software component provides not only information control over stored documents, but also facilitates security control. It provides the benefit of skipping strict storage order, since the system could anyway recognize the location of documents. Moreover, personnel will be able to easily find any prescription.

Smart storage’s *Uniqueness*, comes from the fact that there is no product in the market with similar characteristics. The existing systems are mechanical (movable shelves) but do not offer the same range of benefits: information control and security.

Considering its *Protection*, the product may require patents.
Finally, in regards to its Readiness, it is not possible to assure the needed time required to the Smart storage development and beginning of commercialization. However, not-formal opinions from developers (Davila Garcia, RFID developer, personal communication, 2007), suggest that in six months the software component and the electrical part could be functional (Davila Garcia, RFID developer, personal communication, 2007).

**Smart storage benefits**

As described earlier, Smart storage offers valuable benefits to the pharmaceutical sector, which are information control, time saving and space saving.

**Product drawbacks**

A possible digitalization of prescriptions in the near future could impact negatively over Smart storage usage. If that occurs, the business concept could not add any value to customers.

Another important draw-back is Smart storage’s cost. It is possible to say that the price will be higher than the price of a normal movable shelf. Currently the indirect competition impacts negatively on the desirability to buy Smart storage since it was not really possible to find a remarkable added value that could differentiate the product from its competitors. The question that arises is “Could Apoteket afford to implement a rather expensive product when there are other “similar” products in the market?”

### 4.5.3 Market analysis

The market size could be considered large since there are 980 pharmacies in Sweden (Apoteket, 2007).

The Targeted customers are basically those pharmacies that need to store prescriptions.

For market Reachability, it could be necessary to contact the management group located at the head office. Having some contacts in Jönköping it could be easier to know who to talk with.

Regarding Other choices, we observed a two folded situation. In one hand, there is not direct competition. On the other hand, indirect competition is observed in the suppliers of manual movable shelves and also in software developers (for information systems designed to manage electronical prescriptions). Moreover, it is also possible that the central office in Stockholm decides to centralize the information control of prescriptions through a sophisticated information system.

The Need for Smart storage in the pharmacy is not crucial, as we understood. However, it could add important values to customers.

Finally regarding Growth prospects this market is for now stable and there is a trend of keeping the same size as today. Considering the future, if the monopoly disappears,
there could probably be more chances for Smart storage to be required. However, these are only assumptions.

4.5.4 Concept statement

Since we did not find enough evidence of the existence of a real possibility (“killer application”) for Smart storage in the pharmaceutical sector, we decided not to define a concept statement. We base our reasoning in the fact that it was not possible to define an advantageous situation or opportunity for the business idea to succeed. Moreover, the possibility of a centralization of prescription’s handling to a central Apoteket in Stockholm, decreases the chances that Smart storage could be useful in the future.

4.6 Banks

The following section is based on the empirical findings explained in chapter 3.2.7.

4.6.1 Fatal flaw

To see whether the idea was feasible we answered the questions proposed by the fatal flaw model.

<table>
<thead>
<tr>
<th>Banks</th>
<th>Yes</th>
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</table>

According to our findings, we argue that Smart storage does not serve a presently underserved need. We base our reasoning in the fact that the offered benefits of the business idea do not help to fulfil any real need. Moreover, since there was no indicator of demand for a product like this, it is possible to argue that demand can not exceed supply. Finally, it was not possible to identify any advantageous situation that could turn it into a desirable product.

Having this in mind, we decided not to continue with the feasibility analysis since the fatal flaw model indicated three No.

5 Conclusion

This section presents the conclusion of the analysis of each evaluated idea and presents the executive summery of what we consider the potential application for Smart
storage. It is important to remember that each idea related to an industry or business area where Smart storage could be used. Therefore we used Police, Retailers, Tool rental companies, Jönköping kommun (Stadsarkivet), Pharmacies (Apoteket) and Banks as headlines for the respective conclusions.

The section also contains our personal recommendations, implications of this study and its limitations.

**Police**

The Smart storage’s analysis showed that, although there is a need in the market, the characteristics and circumstances of this potential customer (the Police) decrease the possibility of a successful marketing. We base our argument in the following considerations:

First, the Police as a big public organization, normally has a slow decision making process. Therefore, the success (or even the beginning) of any project could depend on this special characteristic. If it took 5 years to decide over the implementation of a new system, it could take other five years for deciding over new changes.

Second, they are already implementing a new support system for storage purposes. They not only purchased movable shelves, but also an information system designed to manage information over impounded objects.

Having this in mind, we conclude that the idea “Smart storage for Police-usage” is not worth to materialize.

**Retailers**

Since there were no indicators of a real need in this market for Smart storage, we conclude that the idea: “Smart storage for Retailers-usage” is not worth to pursue.

**Tool rental companies**

The analysis has shown that further activities should be taken place in order to complete the feasibility of the business idea. This is mainly because of two reasons:

First, it is not possible to assure that the Smart storage product for tool rental companies could be built. This is because of the presence of too much metal in shelves and also in objects that need to be stored in them. Therefore, it is imperative to engage into a product design project.

Second, it was not possible to measure the market attractiveness. The need to analyze the existence of opportunities and the industry attractiveness should be considered as an important requirement for completing the feasibility analysis.

Something that kept our attention was the positive opinion of some executives over the potentiality of the idea for the tool rental sector and the contrasting reaction of potential users (customers) towards Smart storage. Therefore, we leave the case open for further studies.

**Jönköping kommun: Stadsarkivet**
Based on the analysis’ results, it is possible to argue that there is a great potential for the idea “Smart storage for Stadserkivet-usage” and it could certainly become a successful product if a detailed financial analysis result positive. Although its feasibility still needs to be investigated and completed, we conclude that the business concept is worthy to receive attention.

The executive summary of what we consider the potential application for Smart storage is found in chapter 4.4.4.

**Apoteket**

The analysis had shown that it is not clear that Smart storage benefits could really overweight its drawbacks. This is due to costs issues, and the fact that it was not possible to define a characteristic that differentiates it from its competitors (and justifies that cost). Moreover, it is possible that all pharmacies in Sweden adopt a digital and centralized system for handling prescriptions. If that occurs, Smart storage could become obsolete and Apoteket might not want to invest in a system which could be useless in the near future.

**Banks**

Based on our analysis’ results, it is possible to say that there was not a real need in the banking sector for Smart storage. However, we suggest keeping in mind this area in the future, since as stated by a Nordea representative, it is possible that central money storage facilities and safe deposit boxes organizations could come into existence. Therefore, there could be a market for Smart storage since these institutions could require the space saving and information control benefits offered by the business concept.

**5.1 Recommendations**

**Kommun, Smart storage for Stadsarkivet**

According to our analysis and conclusion, we argue that there is a great potential for starting a “Smart storage for Stadserkivet-usage” project with public archive institutions. We personally recommend engaging in a pre-study of the project, in order to investigate over different issues, like product design (technologies to use, information control needs, and other general customer’s requirements) and a complete feasibility analysis. This could be the initial step for a formal project with public institutions.

At a later stage, and after having an initial idea of what the cost of the product could be, the formal project should start. In this case, a deep analysis of customer’s needs could help to specifically define which characteristics Smart storage should have to fulfil Stadsarkivet’s requirements.

We believe that a successful implementation in Jönköping’s Stadsarkivet could lead to increasing demands in other kommuns.

**Tool rental companies**
Since the idea “Smart storage for Tool rental companies –usage” seemed potential for representatives of organizations which work in related business, we believe that further studies should be taken place in order to discover the existence of advantageous situations that could lead the business idea to success.

5.2 Implications

In the Recommendations’ chapter (5.1) we suggested to continue with a complete feasibility analysis for two ideas. Further studies should be done for the “Smart storage for Stadsarkivet-usage” and “Smart storage for Tool rental companies –usage”:

**Smart storage for Stadsarkivet-usage**

We suggest that the following studies should be taken place: Product development analysis, Financial feasibility analysis, Complete Market study.

**Smart storage for Tool rental companies –usage**

We suggest that further studies designed to better scan the market could help to visualize a real opportunity for Smart storage.

5.3 Limitations

It is important to note that this study is based on a limited number of potential prospects. Bigger samples could provide a more objective perspective of the contacted companies’ opinion towards Smart storage.

Finally, this thesis should be considered as guidance for future studies.
References


Appendix A, Picture of compact archive
Appendix B, List of ideas from brainstorming

The complete list of ideas is presented as follows:

**Administrative issues**, storage of:
- Documents (book keeping, invoices, contracts, etc).

**Airport, Railways** storage of:
- Luggage
- Lost and found

**Bank, Government, Embassies** storage of:
- Money
- Documents
- Safe-deposit boxes

**Bar, Restaurant**, storage of:
- Alcoholic beverages

**Dry cleaner, Renting stores** storage of:
- Clothes
- Costumes

**Factories**, storage of:
- Special tools
- Chemicals
- Paint, Ink

**Fashion, Theatres, Bar**
- Clothes

**Food industry**, storage and “aging” of:
- Cheese
- Wine
- Food

**Funeral companies**, storage of
- Coffins.

**Hospitals**, storage of:
- Valuable materials
- Consumption materials
- Drugs
- Patient files

**IT**, storage of:
- Servers

**Library**, storage of:
- Books

**Media industry**, storage of:
- Master tapes

**Military** storage of:
- Guns
- Ammunition
- Consumption material

**Museums**, storage of:
- Art pieces
- Books

**Pawn broker**, storage of:
- Items

**Police station, Forensic, Justice connected agencies**, storage of:
- Evidence
- Lost things
- Individual records

**Renting tools companies**, Storage of:
- Tools
- Machines

**Shoe, industry**
- Shoes

**Textile industry**, storage of:
- Textile pieces

**Warehouses**, storage of:
- Cold storage
- Items
## Appendix C, Idea Evaluation Sheet

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