Industrial buyer behavior
A study of the industrial buying behavior in Life Science organizations when faced with a radical innovation

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Master thesis
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Abstract.

A central part of the marketing process is to be aware of why a customer or buyer makes a purchase and without such an understanding, businesses find it hard to respond to the customer’s needs and wants. A large part of the current literature concerned with industrial buyer behavior has tended to focus on modeling and mapping the industrial buyer behavior. However, scarce research has been found on how the industrial buyer behaves when faced with a radical product innovation. Therefore, the purpose of this thesis is to investigate the industrial buyer behavior of firms within the Life Science sector in Uppsala when faced with a radical product. We aim to study the process and identify possible differences from buying a non-radical product. This study will provide valuable information about industrial buyer behavior that might be useful to marketers. This thesis will be conducted by using a deductive and qualitative approach. A case study approach was used with the selected three organizations in the Life Science sector in Uppsala. Semi-structured interviews and a survey were used to gather primary data; secondary data was collected through web pages. Our findings from these three organizations show that the industrial buyer behavior is affected. Using the buy grid framework we see that the process, the steps, doesn’t change but within the steps different actions are taken. Step 1, 4, 5 shows strong differences when confronted with a radical and a non-radical product. These differences depend on the complexity of the product and the amount of available information. This affects the level of willingness to take risks. As the complexity is seen as high in radical products and there is not sufficient information the risk of buying this type of product means taking high functional risk and high financial risk which the organizations wants to avoid. However, the decision center [decision group] becomes more complex and more individuals are involved in the decision process when faced with a radical product. The most notable factors influencing the decision center in this situation is the size of the organization, the complexity of the product, the functional and financial risk, the importance of the decision at hand and personal experience. The supplier criterion goes from being price orientated in the case with a non-radical product towards being more supplier orientated when faced with a radical product. This study does not aim to investigate how companies should market their products and neither does it try to generalize conclusions about industrial buyer behavior. This limitation is due to the small sample used.

Keywords: Industrial buyer behavior, innovations, radical products, marketing, life science, buy grid framework, industrial purchasing, industrial buyer process.

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# Table of content

1. **INTRODUCTION** ......................................................................................................................6
   1.2 BACKGROUND.......................................................................................................................7
   1.2.1 Radical innovations ..........................................................................................................7
   1.2.2 The Life Science Industry ................................................................................................7
   1.3 PROBLEM DISCUSSION ........................................................................................................8
   1.3.1 Purpose ...........................................................................................................................10
   1.4 LIMITATIONS ......................................................................................................................11

2. **INDUSTRIAL BUYER BEHAVIOR THEORY** .................................................................11
   2.1 Situations affecting the Industrial buyer behavior ..............................................................12
   2.2 Buyer decision process ........................................................................................................13
   2.3 Buyer decision center ..........................................................................................................14
   2.3.1 Roles in the decision center ...........................................................................................14
   2.3.2 Factors influencing the buying center .............................................................................15
   2.4 The buy grid framework .....................................................................................................17
   2.5 THEORETICAL FRAMEWORK ............................................................................................18

3. **METHOD** ...........................................................................................................................18
   3.1 INDUCTIVE, DEDUCTIVE AND ADDUCTIVE ..................................................................18
   3.2 QUALITATIVE AND QUANTITATIVE APPROACH ...............................................................19
   3.3 RESEARCH STRATEGY..........................................................................................................19
   3.4 SELECTION .........................................................................................................................20
   3.5 DATA COLLECTION .............................................................................................................21
   3.6 METHOD FOR ANALYSIS ....................................................................................................22
   3.7 VALIDITY AND RELIABILITY ..............................................................................................22
   3.7.1 Validity ............................................................................................................................22
   3.7.2 Reliability .......................................................................................................................23
   3.8 ETHICAL CONSIDERATION .................................................................................................23

4. **EMPIRICAL FINDINGS** .......................................................................................................23
   4.1 THE COMPANIES ................................................................................................................23
   4.1.1 Company A ....................................................................................................................23
   4.1.2 Company B ....................................................................................................................24
   4.1.3 Company C ....................................................................................................................24
   4.2 INDUSTRIAL BUYER BEHAVIOR .....................................................................................25
   4.2.1 Non-Radical buy –process and –situation ........................................................................25
   4.2.2 Radical – Buy -process and -situations ...........................................................................27
   4.2.3 Non Radical – Decision centers – roles and influencing factors ......................................28
   4.2.4 Radical - Decision center – roles and influencing factors ..............................................30
   4.2.5 Attitudes towards radical innovations ............................................................................31
   4.3 SUPPLIERS CRITERIAS .......................................................................................................32
   4.3.1 Non-radical .....................................................................................................................32

Master thesis: Industrial buying behavior and radical innovations
4.3.2 Radical

5.1 Buyer behavior process

5.2 Decision center- roles and influence

5.3 Supplier criterion’s

6. Conclusion

7. Further research

References
1. Introduction

A business strives to create and deliver products or services which aims to solve or satisfy a customer’s problem or need (Kotler et al. 2007). The common way of doing so is to identify a customer or a market which has a clear demand of something or identify an issue which the customer or market might have but is not aware of (Tidd et al. 2005). In today’s technical and highly competitive business world the development of new product innovations have become a crucial element in order to stay competitive (McDermott et al. 2002). The reason for developed innovations is not only for defending current market shares but also to gain new markets shares from competitors. Research has been able to show a positive correlation between market performance and new innovative products (ibid). The Life Science industry within Uppsala is a typical example of a remarkably growing market where new product innovations have been an important contributing factor to this growth (www.cind.uu.se, 2011-03-12). However, as time has passed the focus has shifted from develop innovations to develop innovations faster than your competitor (Tidd et al. 2005). From a research point of view a great focus has been put on different areas, such as how to handle innovations, what characterizes an innovative organization, knowledge management and ‘learning organizations’ (Tidd, J. 2000). Although an organization can manage and produce innovations, they still need to be able to market it and create a sale in their targeted markets. This is especially necessary when the innovations are considered to be of a radical nature (McDermott et al. 2002). A radical innovation is something that has never been seen before on the market and therefore no information or previous experience or references are available to the buying part (Tidd et al. 2005). The radical innovation can be quite a challenge to market for the marketer because of its very nature. In new product marketing, the marketer has to understand the process of new product adoption; how an innovation gets adopted by the different segments of a society or market over time (Tidd et al. 2005).

This makes it highly relevant for the marketer to understand the different factors affecting this process; thus by understanding the influencing factors the marketer can adjust the market plan and thereby properly manage the spread of the new product or service and ensure a high adoption rate of the marketed product (Parkinson & Baker, 1986). Kotler & Armstrong (2008) explain the importance of organizations understanding the industrial buying behavior. Understanding this will help the selling organization understand their customers and thereby be able to create added value for them.

Master thesis: Industrial buying behavior and radical innovations
In theory this seems uncomplicated; from the marketer point of view it is about understanding the buying behavior of the targeted organization and its need. From the buying organization perspective it’s about finding relevant information to make appropriate decisions whether to buy and adopt the product or to reject it. However, depending on the characteristics of the innovation offered and the amount of given information this can be a much more complex process then it seems to.

1.2 Background

1.2.1 Radical innovations

An innovation can be big or small, brand new or just a bit different. It is an idea, behavior, or object that is perceived as new by one individual or its target audience (Rogers, 2003). Organizational success derives from innovations (Tidd et al. 2005). Innovation is considered to be an important topic in the fields of business, economics and especially in entrepreneurship. It can be considered as a major driver of the economy, as it commonly leads to new product categories or increased productivity (ibid). According to Tidd et al (2005) the term innovations can be divided into two different types; incremental and radical. The differences are in how it will influence its target markets, customers, behaviors, competitors, norms and values (ibid). Radical innovation is commonly recognized within new types of technologies, new business models and breakthrough businesses (www.creativeadvantage.com, 2011-04-07).

1.2.2 The Life Science Industry

The Life Science-sector consists of a variation of companies with focus on different areas such as bio-technics, medical-oriented, biomedical sciences, biochemistry and health science-related businesses (www.stockholm.se, 2011.02.12). In the Uppsala region there are mostly companies focusing on biotechnical tools, medical technology and medicine.
The development trend and success rate for Life Science companies in Uppsala is very promising (www.cind.uu.se, 2011.02.12) There is an increase of fifty new companies in this sector since 2003; in 2008 there were over two hundred companies in this particular region with an estimated turnover of 15 billion SEK (ibid). According to the report made from Stockholm-Uppsala Life Science [SULS], the factors contributing to the increase of this market is increased innovations and investments (www.suls.se, 2011.02.18).

1.3 Problem discussion

It is clear that in today’s highly technical and highly competitive business world, successful investments have become one of the most vital activities for an organization in order to stay competitive (Tidd et al, 2005). Investing or ordering new pens or papers for the office is one thing, but investing in a new type of substance for your production or a new IT-infrastructure creates a different situation – they are considered to be risky, involve high stakes and could have long-term consequences for the organization (Aggarwal et al. 1998). From the industrial organization point of view there are two dominant factors that need to be taken into consideration for making investment-decision in products; (1) Financial Risk and (2) Functional Risk (Aggarwal et al. 1998). The financial risk concerns when the customer may lose the invested capital in the invested product, also when facing a new product, is the risk of continuous maintenance which could result in spending even more financial capital than planned (ibid). The functional risk concerns the possibility of new product not reaching up to the expectations. Due to insufficient information or other inputs from other references it creates a situation where the potential industrial buyer might not get the correct picture of what they are buying (Aggarwal et al. 1998). The worst case scenario is that the product does not work at all. This functional risk exist in this situation because of the nature of the radical innovation, it has not been tested in the real world thoroughly (ibid). As the perceived risk increases, the adoption level decreases and so does the diffuse rate (Rogers 2003 & Sheth et al 1998).

However, here is where the marketer steps in; with great understanding of the industrial buyer process the marketer knows how to adjust and tweak the available information to ensure a successful sale and a great post-sale experience. This could be working if the product would be of a non-radical nature. But when faced with a product that can be defined as a radical innovation, the playing field transforms.
According to Leifer et al. (2000) one of the main problems with radical innovation is its very nature; the never seen before-issue which creates a situation where marketers has to handle the situation of only having information from within their own organization and not any references nor test results from external sources and from this has to build a marketing plan. This in turn is based on the industrial buying behavior theory which should, in theory, improve the chances of success when it comes to the diffusion and adaption of the product. What characterizes the theory of industrial buyer behavior is the need for information (Moriarty et al. 1984). Current research regarding industrial buyer behavior concern mostly of non-radical products where there is a possibility to gather information from other sources than the selling organization (Samaniego & Cillian, 2004). For an organization or customer to make a purchase decision it demands that they have required information available; information which is both relevant and understandable for the organization. If the product is perceived as a high risk and complex the need for information grows even bigger (Kotler et al. 2007). If the product is perceived as risky [functional and financial risk] the more information is needed and without the information a negative outcome of the marketing campaign is thereby inevitable (ibid). A product which is perceived as risky requires more information; more information is gained by a search activity in different sources; references, reviews, information from the marketer, internet and so on (Reeder et al. 1991). These factors are vital and might affect the industrial buyer behavior and therefore considered as key elements in the industrial buyer behavior theory (ibid). When the buyer faces a radical innovation they cannot collect information and make comparisons between alternatives as when facing non-radical innovations. Johnston & Lewin (1996) analyze the stream of research on the topic of industrial buyer behavior published over the past 30 years. The authors present a combination of findings from the original work performed by authors such as Robinson et al (1967), Sheth (1973), and Webster & Wind (1972, 1980). A large part of the literature concerned with industrial buyer behavior has tended to focus on modeling and mapping the industrial buyer behavior (e.g. Robinson et al. 1967; Sheth 1973; Webster 1965; Parkinsson & Baker 1986; Wind & Thomas 1980; Samaniego & Cillian 2004).

These authors have conducted research and brought vital information and models to this area of research (ibid). Much of the current popular literature has been to do with mapping the buyer process, describing different buying situations, defining the buying centers and presenting different criterions and factors influencing the members of the buying center.

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These studies relate to each other in the sense that they contribute with vital information to this field with the purpose to increase knowledge surrounding buyer behavior and thereby increase the possibility for marketers to successfully penetrate their products into the market. The author’s arguments and conclusions surrounding the field of buyer behavior are supported by evidence from; case studies, statistics and recent scientific findings, their perspective is also perceived as even-handed and not prejudicial which makes their findings convincing and reliable (Johnston & Lewin, 1996). However, no research has been found surrounding buyer behavior when faced with a radical product innovation and therefore this lacking part in current research is considered as a weakness. Due to the fact that studies have confirmed that businesses want to be more innovative and the importance of new innovations is increasing it makes it highly relevant to increase knowledge about how the industrial buyer actually behaves when dealing with a radical innovation (Tidd et al. 2005). This study aims to contribute with valuable information and knowledge to the theory of industrial buyer behavior which thereby can be useful for marketers when launching their radical innovative products. The choice of research subject [Life Science sector] is made because of the great importance of new product innovations in this particular market while at the same time there are strict governmental regulations for developing or buying new products (Interview 4). This situation could be considered as contradicting since there is a great need for new product innovations while simultaneously there is skepticism towards new products due to the highly regulatory demands and the consequences of failure. This makes it thereby highly interesting to investigate the buyer behavior of these firms when faced with a radical product innovation.

1.3.1 Purpose

The purpose of this thesis is to investigate the industrial buyer behavior of firms within the Life Science sector in Uppsala when faced with a radical product. We aim to study the process and identify possible differences from buying a non-radical product. We believe that this study will provide valuable information to marketers and increase their knowledge about the industrial buyer behavior.

1.3.2 Research questions

To ensure delivery upon the purpose, two research questions was formed which aimed to guide through the thesis. With these questions answered the purpose of this thesis will be fulfilled.

- How does the industrial buyer behave when faced with a non-radical product?
- How does the industrial buyer behave when faced with a radical product innovation?

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1.4 Limitations

This study does not aim to investigate how companies should market themselves or their products and neither does it try to generalize conclusions about industrial buyer behavior. In order to collect valuable and precise information we have chosen to limit this study by focusing on companies within the Life Science sector in Uppsala. We have chosen to focus specifically on product innovations with a radical nature which make this study more specific and narrowed. Due to the page limits of this study and the timeframe, stated by the faculty, we have chosen to focus on three organizations which we collect data from and thereby form our empirical chapter.

The findings in this thesis cannot be generalized but describes the situation for these three companies in the settings of facing a radical innovation.

2. Industrial buyer behavior theory

It is considered as highly important to be aware of why a customer or buyer makes a purchase. Without such an understanding, businesses find it hard to respond to the customer’s needs and wants (Parkinson & Baker, 1986). It is important to be aware of the differences between consumer buying and industrial buying because the industrial buyer behavior differs from consumer buying in many aspects such as; using more variables and greater difficulty to identify process participants (Moriarty, 1984). The industrial buying is described by Parkinson & Baker (1986) as the buy of a product which is made to please the entire organization instead of satisfying just one individual. Industrial buying behavior is considered as being a elementary concept when it comes to investigating buyer behavior in all types of organizations (ibid). Also, in industrial buying situations there is a perception of greater use of marketing information, greater exploratory objective in information collection and greater formalization. (Deshpande & Zaltman, 1987)

The article by Johnston & Lewin (1996) illustrates that the broad amount of research conducted consolidated the existence and relevance of three important dimensions when investigating industrial buyer behavior.

1. How the **buyer decision process** looks like when organizations stands in front of different buying situations.
2. The **buying decision center** and factors influencing the buying process within the organization
3. The different criterion’s used by industrial buyers when buying a product/service.

These three dimensions are considered as highly relevant for this research and will therefore be used throughout the study [fig 2]. In order to increase knowledge about the industrial buyer behavior, these three dimensions will be further described in more detail in the coming chapters of the theoretical framework.

### 2.1 Situations affecting the Industrial buyer behavior

We consider it to be crucial to describe the essential circumstances that influence the buyer behavior and thereafter we will continue with describing other relevant factors. Robinson et al. (1967) argues that there are some circumstances during a purchase being more important than the actual product/service being bought. Based on these assumptions the authors studies different buying situations and present these situations in three main categories, so called “buy-classes”; (1) new task; (2) straight re-buy; (3) modified re-buy (ibid). In a new task buying situation the product/service is completely new to the organization. The buyer has insufficient or no experience and knowledge about the product/service in order to compare alternative suppliers with each other. The buyer and the influencers need to gather relevant information before the decision to purchase is made. A straight re-buy is the most common form of industrial purchase situation where the buying organization requires little or no information about the product/service. This situation is considered as routine buying and the industrial buyer most often have well developed criterion’s that have been often used before. (ibid). Evaluating criterion’s, suppliers and other stages in the process are considered as unnecessary in this situation since the same product has been bought before. However, the first step of the process (need recognition) is taken into consideration. On the other hand, a modified re-buy occurs after the buyer have bought a new product or made a straight re-buy. The industrial buyer reevaluates the supplier, product, prices and services; however this doesn’t mean that the buyer will change product or supplier. According to Robinson et al (1967) there are four factors leading to a modified re-buy; cost reductions, disaffection with current supplier, development of product or better offerings from another supplier surrounding price, quality or service. In this case the buying organization puts most focus in evaluating suppliers. (ibid)
2.2 Buyer decision process

After defining the different circumstances influencing the buyer behavior we argue that it is important to define the actual buying decision process. In order for a marketer to be successful he needs to examine the complex subject of buyer decision processes (Kotler et al, 2007). The buying process involves different stages that organizations phase during and after a purchase. Yet, this buying process may differ a lot depending on what type of product that will be bought (ibid). The authors Robinsson et al (1967) illustrate this process by developing a model which lays down how the process of deciding to buy a product looks like for industrial organizations. This model is separated into eight different buy-phases. These phases will be described in more detail below;

1. Need recognition: This is the first step in the buyer process where a problem or need is identified by someone in the organization
2. Definition of the characteristics of the item needed: In this stage a description of alternative solutions is presented and questions like; what does the company need? Which service attributes and quantities are needed?
3. Development of the specifications: A more detailed technical specification of the product/service is presented. This information will be vital for the coming stages.
4. Search for suppliers: The buying organization searches for suppliers that can offer them the wanted product/service. When dealing with more complex and costly products/services the buying organization spends more time finding their supplier.
5. Acquisition and analysis of proposals: The most qualifying suppliers are chosen and their different proposals are analyzed. If the buying organization are buying more complex and expensive products/services the suppliers need to make formal presentations of alternative solutions responding to the organizations need. This stage is similar to the previous stage and occur almost always in parallel. However, if the buyer have very little information from the beginning then these stages are more separable.
6. Evaluation of suppliers: The members of the buying decision center evaluate the supplier by the product/service attributes offered (which attributes matter most?), brand belief (opinions about the brand)
7. Selection of an order routine: This phase starts by sending an order to the supplier. However, the buying process is not finished until the product/service has been delivered and the buying organization has accepted it. Preparation of the order before it is sent to the supplier, control and evaluation of the order are some of the activities done in this phase
8. **Evaluation**: Post purchase evaluation to see whether the supplier and the product/service fulfilled the requirements and preferences.

**2.3 Buyer decision center**

A group of individuals within an organization form the buyer decision center. According to Cyert & March (1992), all organizations have their own decision center. However, this center might differ in terms of size and structure from one organization to another. The term of decision center implies to all members being a part of the industrial buying decision process (Robinson et al., 1967). According to Cyert & March (1992), the decision center consists of individuals having different goals such as profit, sales, market shares and production. According to Parkinsson & Baker (1986) when a organization identify their buying center it is important to tackle two important factors;

1. **Roles** in the decision center
2. **Factors influencing** the members

**2.3.1 Roles in the decision center**

In every decision center there are different members having different roles and authorities and according to Webster & Wind (1972) this decision center can be a very complex environment consisting of initiators, buyers, users, influencers, decision makers and gatekeepers. The *initiators* are the individuals within the organization that first recognizes the need for a product or service. The *buyers* have the formal authority and responsibility for choosing suppliers, deciding buyer conditions and price negotiations. (ibid)

While the *users* are the actual individuals that will use the product and they are best equipped with the right knowledge and experience to evaluate the product. The *influencer* do not have any direct authority when it comes to the buyer decision, however, they still affect the decision outcome. The *decision makers* have a formal authority and responsibility to make the final decision. Finally, the *gatekeepers* control the information flow in this decision making process and thereby they affect the process indirectly (Webster &Wind, 1972).
2.3.2 Factors influencing the buying center

As mentioned earlier, the buying center consists of individuals within an organization with different roles and authorities. When talking about industrial buyer behavior and decision processes we need to be aware of the fact that we are dealing with human beings that get influenced by different factors. These factors influence the buying center and thereby the decision outcome and therefore we believe that it is important to highlight these factors in more detail. These factors are illustrated in Figure 3 and further explained in the coming chapter. According to Samaniego & Cillian (2004), there are several important factors influencing the buying center and thereby also the industrial buying behavior. The authors have developed a model containing three types of variables that are considered as being critical for the buying center. These variables are: (1) conditions of the buying situation, (2) personal characteristics and (3) organizational structure characteristics. These variables are illustrated in the model below:

2.3.2.1 Conditions of the buying situation

According to Samaniego & Cillian (2004) there are five different variables that influences the buying center; (1) **Buyclasses**: have a direct influence on the buying center. According to the industrial buying theory, the buying center searches for more information if they are facing a new task and thereby it decreases uncertainty. (2) **Level of complexity**: this variable consists of two types of areas; the complexity of the buying situation and; the complexity of the product (Dadzie, Johntson et al 1999). According to Bonoma (1982), the higher the level of complexity (*buying situation & product*), the more individuals involved in the buying center. (3) **Importance**: the degree of importance is defined as how much the purchase has influence on the organizations productivity and profitability. Bonoma (1982) argues if the degree of importance and complexity is low, one single individual can hold all roles in the decision center. (4) **Risk**: if the industrial buyer experience greater risk with the purchase the degree of influence and involvement in the buying center increases. This is done in order to reduce and minimize potential risks.

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**Master thesis:** Industrial buying behavior and radical innovations

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Fig. 3. Factors influencing the buying center, model from M.J. Garrido – G.Samaniego & J. Gutierrez-G.Cillian (2004).
(5) **Time pressure**: According to Speakman & Mariarty (1984) referred by G.Samaniego & G.Cillian (2004) the degree of involvement and influence reduces when there is a high time pressure.

### 2.3.2.2 Personal characteristics

According to Samaniego & Cillian (2004) there are two different variables related to the personal characteristics that influences the buying center. **(1) Personal influence**: the more an individual is involved in the buying process the greater the possibility for the individual to feel motivated to participate and influence the buying center. **(2) Personal experience**: the greater individual experience [in terms of buying] increases the involvement and influence on the buying center.

### 2.3.2.3 Organizational structure

According to Samaniego & Cillian (2004) there are five different variables related to the organizational structure that influences the buying center; **(1) Size**: Size and the structure of an organization determine the size and complexity of the buying center, **(2) Specialization**: higher degree of specialization within an organization leads to higher involvement and influence on the buying center, **(3) Standardization**: higher level of standardization increases the possibilities to develop well structured buying centers and thereby decreases the degree of involvement and influence, **(4) Centralization**: a higher degree of decentralization indicates that a larger number of departments within the organization are involved, which in turn signify that more individuals are involved and influence the buying center, **(5) Formality**: Different types of formalities such as rules, policies and different procedures for certain activities influence the buying center and thereby the buying process (ibid).

### 2.3.3 Supplier selection criterions

According to Axelsson (1998), there is always a step in the buying process where the buying center evaluates different suppliers based on some certain criterions. The author presents important factors that need to be addressed when choosing a certain supplier. These factors where brought from an earlier research where organizations where asked what they considered to be the most important factors when evaluating a supplier (ibid). These factors are as follows;
1. Price  
2. Product quality  
3. Accessibility to information  
4. Service & Support  
5. Delivery costs  
6. Delivery time  
7. Stability in the delivery  
8. Participation in the product development  
9. Supplier flexibility  
10. Geographic localization  
11. Technological standard  
12. ISO-certification

However, the authors Cebi & Bayraktar (2003) also present some other important factors when evaluating a supplier such as:

1. Supplier reputation  
2. Earlier experience with supplier  
3. Guarantees of results  
4. Supplier knowledge and competence  
5. Direct communication and contact

### 2.4 The buy grid framework

It is not easy to develop a model that fits in all situations for industrial buyer behavior. The buyer decision process will most often change from one situation to another depending on which factors influence the decision in each specific situation (Parkinson & Baker, 1986). However, Robinson et al (1967) have developed a model called the Buy grid framework where they combine the eight staged buyer decision process [fig 4] with the three different buying situations. This framework illustrates the process of an industrial buyer moving through finding a need/identifying a problem towards purchasing and evaluating it. Depending on the buyclass the different steps become more or less important.

<table>
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<th></th>
<th>New buy</th>
<th>Modified re-buy</th>
<th>Direct re-buy</th>
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<tbody>
<tr>
<td>Identify problem</td>
<td>Yes</td>
<td>Maybe</td>
<td>No</td>
</tr>
<tr>
<td>Define criteria</td>
<td>Yes</td>
<td>Maybe</td>
<td>No</td>
</tr>
<tr>
<td>Product specification</td>
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<td>Search for suppliers</td>
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<td>Maybe</td>
<td>No</td>
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<tr>
<td>Analysis of offers</td>
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<td>Choice of supplier</td>
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<tr>
<td>Evaluation</td>
<td>Yes</td>
<td>Yes</td>
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2.5 Theoretical Framework

To be able to analysis the industrial buying behavior a clear understanding of how these different fields relates to each other. Figure 5 visualizes the relation between the buying center, buy grid framework and the suppliers criterions. This aims to help us in our analysis, it visualizes the relationships and how it affects each other.

3. Method

3.1 Inductive, Deductive and Adductive

Deductive means that from theory assumptions are created about the real world; a deductive way of working is characterized by grounding the purpose of the thesis in theories and from this draw conclusions in the specific case (Patel & Davidson, 2003). Inductive means the opposite, collecting data and from this create a theory or idea that explains the phenomenon that has been found (Bjereld et al, 2002). Working in an adductive way means that the author starts of inductive and creates a theory or assumption which is then tested and from this changes are made to the theory and tested and so on (Patel & Davidson 2003; Bjereld et al, 2002; Björklund & Paulsson 2003).

The thesis will be of a deductive nature. A deductive approach was preferred in our situation as we will be in close relation with the organizations and their unique context. This choice was also made because of the actual research area that we focus on [industrial buyer behavior]. From this we will see if the current theory alters, what variables are affected, when confronted with a radical product.

Master thesis: Industrial buying behavior and radical innovations
We believe that by using this theory as a base for our empirical research and not proceed with own assumptions and theories the quality of this study will increase. However, we are aware of the existing possibility that by using a deductive approach [proceeding from existing theory] we might focus on one specific framework and thereby missing other interesting parts or perspectives of this particular situation that could have been identified with other approaches.

3.2 Qualitative and Quantitative approach

The data collected is shaped by the nature of what is being investigated. The way of investigating can be explained in two different ways, the qualitative- or quantitative approach. It is important to be aware of the purpose of this thesis and through this form the way of collecting, viewing and analyzing data. This is important because the different options would reveal different paths and present different depths of the results (Patel & Davidson, 2003). A quantitative approach means that the authors commonly use statistical methods in their analysis and use different type of data collection method (ex. surveys) to find patterns (Patel & Davidson, 2003). According to Bjereld et al (2002) if the thesis aims to answer questions such as how many or how much or in what extent a quantitative approach is recommended.

The qualitative approach aims to create an understanding of the situation and connect it with different actions and behaviors (Bjereld et al, 2002). When deciding which approach is suitable we started from the purpose. As the purpose is of an exploratory nature a qualitative approach was appropriate for our thesis (Björklund & Paulsson, 2003). By using a qualitative approach we would get an in-depth view of what is going on in this specific setting. According to Patel & Davidson (2003) one of the reasons for using a qualitative approach is because the research is about understanding influence or behavior in a situation. As the purpose of this thesis is to understand the subjects when confronted with a new situation compared to another one.

3.3 Research Strategy

We used case study for this study. Case study means that the research focuses on a case, a specific situation and digs deep into it (Dul & Hak, 2007). It does not have to be bound to one single organization or individual, but a case study can involve a small number of organizations but the need to face the same situation or case (Patel & Davidson, 2003).
Yin (2003) argues that it is preferable to use a case study approach when the purpose of the research aims to answer questions like how, why and when the researchers have no or little control over the situation/context. Our research aimed to answer questions of such nature [how, why] related to how the organization acts in a specific situation. What characterizes a case study is the aim to study the subject in depth with a qualitative way (Patel & Davidson, 2003). Usually there is a greater focus on processes, relations and behavior within this type of study (ibid). It is also characterized by the possibility to use different data collection methods (ibid). This thesis used a case study approach because of the aim to get a deep understanding of the selected organizations when they are faced with the situation of buying a radical innovation. We believe that our research questions would be best answered through a case approach because we can thereby focus on the chosen organizations and collect detailed data in relation to our purpose.

3.4 Selection

To get relevant subjects for our research a list of criteria were created. By doing so, the data will be of better quality (Woodside, 2010). If the subject(s) matched our criteria’s we tried to book a meeting with them for an interview. The criteria’s that was used for the selection are the following:

- Organizations located in Uppsala. Because of the tremendous growth of both life science organization and companies aimed to serve and sell towards these companies.
- Active within the life science market. The importance and relevance of life science market in Uppsala.
- Possibility to conduct the data collection with the one responsible for purchases. To get data from someone who handles this type of purchasing decisions.
- Experience with buying products or services from other organizations of radical nature. This is to make sure that the data collected is connected with real life situations and not just guesses.

From this, organizations were selected if they fulfilled our requirements. Three companies was contacted and interviewed. All interviews were with the heads of purchasing for each organization. They had a long history of purchasing (<8 years) and had been in situations that matched our case. In order to get a deeper understanding we had a fourth interview with a chief executive at an IT-consulting company in Uppsala that targets most of their products and services towards organizations towards the Life-Science market in Uppsala.

**Master thesis:** Industrial buying behavior and radical innovations
This interview was conducted in order to increase the understanding of the actual market but also to understand the reasoning behind a “selling” organizations. This enabled us to get a better understanding of the field and the situation posed by a radical product.

### 3.5 Data collection

We used mixed-method approach for our data collection. In this thesis we used semi-structured interviews and a smaller survey. The reasons for a semi-structured interview are many, but the most important in our case is the possibility to ask complicated questions and follow-up questions related to the first question (Björklund & Paulsson, 2003). However, we also chose semi-structured interviews because of its flexibility and because it provides us with the respondents own assumptions which we consider as highly important and relevant for this type of research questions. We argue that by using semi-structured interviews we were able to gather relevant empirical data to be able to conduct this type of study. After the semi-structured interview had took place we handed out a small survey which was filled out by the respondents. This was done in order to identify how the respondents valued different criterions. This would help us triangulate toward a common conclusion because the survey and semi structured interview both aimed to answer the posed research questions.

Before we conducted the interviews, an e-mail containing the purpose of the interview and some examples of questions that will be asked during the interview was sent (Appendix A). An interview design was created to help us with the interviews (Appendix B). It helped us during the interview to organize the questions and to recognize where to continue with follow up questions during the interview (Woodside, 2010). We used earlier research to form relevant interview questions. These were formed according to our research questions and the industrial buyer behavior process. The two first main questions interview design was formed after the industrial buyer behavior; the two last was formed after the supplier criterions. Before conducting interviews we tested our interview design on two persons. One of them were from the actual organization which where relevant to our study and the other one where students. The feedback from these two respondents helped us to improve the interview design. The interviews lasted between 60 to 90 minutes, depending on the subjects answers. All interviews were recorded. We tried to keep us within the frames of the research area during the interviews, however, some discussions did fall outside the interview design, and we did not use this information in the empirical findings.
For example; one of the respondents was disturbed by a phone call during the interview which interrupted our interview, the discussion between the respondent and the caller is not a part of the empirical findings. However, by using follow up questions we managed to regain control and continue gather relevant data from this respondent.

### 3.6 Method for Analysis

After the interviews were conducted the data needed to be analyzed. It is important that the researchers are aware of the different ways data can be analyzed and have a strategy for how to do so (Patel & Davison, 2003). According to Patel & Davidson (2003) the recommended way of analyzing is by decoding the collected empirical data. By reading through the data and detect patterns and give them a code or mark them in the text. This is similar to the process in *grounded theory* (Charmaz, 2006). By identifying patterns and reoccurring data, different patterns can be recognized. When these repeating patterns has been identified it will be decoded to understand its meaning, this is called *pattern matching* (Patel & Davidson, 2003). We used this approach when analyzing the empirical data. The identified patterns were given a mark and then it was compared with our selected theory.

### 3.7 Validity and Reliability

When doing research there are commonly two problems that every researcher need to tackle. These are the issues of validity and reliability (Bryman & Bell, 2005). These two factors are important because they influence the quality of the research (ibid).

#### 3.7.1 Validity

To ensure that the research has a high validity it is important that the researchers does not influence or affect the outcome of the research. To prevent this we took the three preemptive actions;

- The interview design was tested on two persons before conducting the *real* interviews. We manage to sort out if our questions were of a leading nature.
- Earlier research was used to form the questions for the interviews.
- The usage of two different data collection methods. The interviews consisted of questions but also a survey. By doing this we can use the both data to confirm our findings.
3.7.2 Reliability
To ensure that this research is of high reliability we took two preemptive actions which were;

- We were always two people doing the interviews and taking notes. By comparing our notes we could identify see if we understood the information differently.
- We used a tape recorder during the interviews. This ensures that we did not miss any data.

3.8 Ethical consideration
Neither the respondents nor the organizations will be mention by named in this thesis. This is done because the aim is to get accurate and honest data. By ensuring the anonymity of the respondents we ensured that the respondents answer would be accurate and of honest nature (Björklund & Paulsson, 2003). The recorded interview, the transliteration and all collected material will be and have been handled with confidentially.

This is to ensure that specific parts of the interviews were sensitive information regarding their competitive advantage would not be spread (ibid). This study contains sensitive information when connected to each organization, therefore the importance of anonymity. The anonymity concerns external readers and the information presented in this thesis is permitted for distribution.

4. Empirical findings

4.1 The companies

4.1.1 Company A
Company A is a contract manufacture who produces medical pills and substances that their clients require. These pills or substances are then sold to the end-customer, individuals who need a type of medicine. They primarily consist of a manufacturing side and a R&D-side, but they do have the usual support-parts such as HR, Finance, and Administration. The R&D aims to developed better tools both for their manufacturing side but also offer services to their clients aimed to satisfy needs, such as stability studies, method validation and enhanced formulations. Company A has currently about 175 employees in Sweden, the organization consist of about 800 employees worldwide. The company has two factories in Sweden, one aimed at manufacturing and a second aimed at manufacturing and R&D.
Internationally there are four more factories where one is manufacturing and R&D-orientated where the other three are focused on manufacturing (Interview 1). The respondent [henceforth Respondent A] from Company A has been working with strategic purchasing for over thirteen years. Respondent A is specifically responsible for all the purchasing which relates to the product which is shipped to the client; everything from the actually material in the drugs to the material which is needed for the packaging of the pills. Respondent A is also involved in investing in new technological products, such as productions tools or systems that aims to help with the manufacturing-process (Respondent A).

4.1.2 Company B

Company B is an entrepreneurial firm which has one product. This product can be found within the dental market. This business conducts product development in Sweden at their R&D facility. This is the typical firm which consists of a smaller HR-, Administration- and a Finance-department which overlap each other. The product itself is, according to the company’s website, one-of-a-kind on its market. The company has about twenty employees which are all located in Sweden. During 2011 they have recruited key personal for attempt to put their product on the international market during the year, and as for now it seems to be successful (Interview 2).

Company B has been around since the 1980 but it is not until 2000 the decision was made to invest heavily into their business and start to market it. The respondent [henceforth Respondent B] has worked for Company B for about a year. The respondent is head of production but also carries the responsibility for purchasing from suppliers and he also negotiates with these suppliers. Before working at Company B the respondent has worked at numerous places, for example GE Healthcare where [s]he were the head of the section of production and purchasing (Respondent B).

4.1.3 Company C

Company C is a multinational company who manufactures and sells medicines and services aimed to help individuals who are chronically or extremely ill. The company has offices and manufacturing plants in Norway and France. Each country has its own HR-, Finance and Administration-units. The R&D is found in Sweden and Germany and is aimed to enhance current product line but also to improve technological manufacturing tools and creating new products (Interview 3). The company consist of over 30 000 employees worldwide, in Sweden there are about 900 employees.

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The outlook for Company C seems to be good; the last fiscal year (2010) exceeded every expectation and financial targets were met. The company was formed around 1912 and has since been an active competitor within the life-science market (Interview 3). The respondent [Henceforth Respondent C] has worked in Company C for about 10 years as the head of logistics and purchasing (Respondent C).

### 4.2 Industrial Buyer Behavior

#### 4.2.1 Non-Radical buy –process and –situation

The three companies showed strong similarities when it comes to the buying process of non-radical products or services. (1) The first step is to identify a need; when asking Respondent A to describe the process of how they work, he answered

“*Yes, you do. You start with the need...*” (Respondent A)

Similar answers were given by the two other respondents. The next step in the process is to, for this need, define criteria’s that aims to help to solve or satisfy this need. The three respondents all pushed that this is an important part due to the fact of that the criteria’s are central to a positive outcome.

“*...and then define the criteria’s...*” (Respondent A)

“*...specific criteria’s defined which the product needs to fulfill...*” (Respondent B)

The next step in the process is to define the product specification. All three companies put effort into this because the need to find a product/service that fits into their need and organization.

“*...where we define the product [service] specifications...*” (Respondent C)

“*...then there are the specific product/functionality specifications...*” (Respondent B)

After defining the criteria’s and specifications the search for suppliers starts. All three companies had a list of already approved suppliers which they turn to, which they preferred to do. Going outside, which happens in all three firms does happen from time to time, it means that they need to certify the supplier before making business with them. They do not favor this because of the governmental regulations but also because they need to follow routines such as *GMP* [Good Manufacturing Practice] or other similar practices (routines) to ensure and show that end-consumers safety is a top priority.
“...according to the GMP we can’t just pick a supplier, what if the supplier is in Vietnam and releasing toxic waste into the rivers ... our products are used by actual humans who have a decreased immune defense and therefore if something is wrong it can result in a serious situation ” (Respondent A)

“...there are regulations concerning how we declare our documentation ... we have routines and ... that we follow.” (Respondent B)

This was also confirmed by Respondent D who mentioned that the strict governmental regulations makes the Life Science market a very sensitive market. (Interview 4)

In this part all three companies mentioned that there is a need for good and great amount of information if the organization is not since before approved. The process is lengthy and requires a great amount of information to be presented which can be validated and to ensure that these suppliers not only can deliver but also are of high quality when it comes to products, production and the handling of waste (Respondent A, C). Respondent A, B and C said that they have specific routines when it comes to handle new suppliers, and that it is important that they are open for an audit from their side. The analysis of offers and choice of suppliers are also similar between these three companies. All three companies based these two steps on the search for suppliers. When the process reaches this part the validation and work relating to supplier is done and only approved suppliers are involved from now on. In these two steps all companies collects the offers from the different suppliers and then starts to play them against each other to receive the best possible offer.

“That’s exactly what we try to do, to get more offers.” (Respondent C)

“... does a reversed auction ...we try to play them against each other... ”
(Respondent B)

The next step in this process is the routines for ordering. Company A and C now take advantage of their IT-systems. Since they have validated the new supplier, or if they used and old validated supplier they simply have them registered within their IT-systems and therefore can just, by using their computers put in new orders if needed.

Respondent B on the other hand simply registers the newly validated company within their folders and simply calls them if they need to put in a new order (a re-buy). Evaluation is the next and last step in the process of buying. Respondent A explained that they try to evaluate every time they made a new buy is made but it does depend on the situation. When they have made an investment they try to evaluate the end result. Respondent A also told us that when it comes to a straight re-buy an evaluation is much more common than if it was a new buy.
“...when ordering, for example materials ... we follow the common routines which deals with prices, terms and ... do follow ups” (Respondent C).

The respondents have described the process of committing to a new buy. When the respondents were asked about a modified re-buy they shared with us that when ordering this type of product the time span is much shorter but also that the whole process is shorten. The process of validating the supplier, searching for the supplier and create routines for ordering is not of importance anymore, it has already been done. Contact is set up with the suppliers who can deliver the modified product. The steps of the process which are affected from a new buy are the products specification. A new set of specification is set, based on the older ones.

When asked about a direct re-buy the process is even shorter, according to Respondent B is a

“... usually a very quick process ” (Respondent B).

The situation of a direct re-buy does not affect the process; instead, for example, respondent shared with us that

“A direct re-buy is quite quick because all you need to do is send an order.”

(Respondent B)

4.2.2 Radical – Buy-process and -situations

All three respondents described their process to be similar to executing a purchase of a non radical product. The different steps of the process are the same. When asking in regards of modified re-buy or direct re-buy the respondents couldn’t share any information with us.

All three respondents spoke of the level of complexity, as they talked about it they described that if the level of complexity rises, the process itself will be much longer than with a non-radical buy. Respondent B shared with us that the problem is that there are no clear routines to use with these types of innovations, you can follow the routines but you need to adapt and try to get all the relevant information which is required. [S]He shared with us that they put focus on how the supplier’s works and the specifications they present to the supplier. The timeline is much longer because they will need to research more and when this is done they will need to double-check everything and then have it evaluated.
The process is longer, as a buy of a non-radical product could take from hours to weeks a radical product innovation could take up to years depending on its impact on the organization.

“We need to investigate if there are any trials with this type of product. We have rules and routines for this type that are very strict and they must be followed, this causes the whole process to be longer than usual” (Respondent B)

Respondent A argued that having the right information is vital for them. Without the right information the consequences could be severe. The process itself will be much longer since more people need to be involved. They will need to test and evaluate it, and be sure they gather the right information and from this they need someone to be in charge of this information (right people has the right information). Respondent A mentioned that they don’t see the financial risk as a pressing matter in this situation but on the other hand the functional risk is what need to be focused on. If something goes wrong the organization would just not end up with delayed delivers but instead the end-consumers [patience in this case] might get pills that are harmful for them. It is also quite important with creating the right specifications that will be handed over to the supplier, it is important that there are exact information on what they expect of this, what it will do, how it will produce, how fast it can produce and so on. Nothing is allowed to left to uncertainty. When asked about communication, if something would be different here compared to a non-radical buy the respondent argued that there will be an increase of communication between the supplier and the organization. Not only do they need to be audited but also they need to be in contact so they can assure that they have control over “their parts”

4.2.3 Non Radical – Decision centers – roles and influencing factors

Every organization has its own center for decision makings and this center can vary depending on the organizational structure and the type of decision to be made. According to Respondent A, the so called initiators within the organization that first recognizes the need for a non-radical product differs a lot depending on the type of need and situation at hand. Respondent A and C mentioned that there are different types of influencers such as the department of Quality and Assurance which conducts the auditing of the suppliers and the quality of the actual product, they do not have any direct authority when it comes to the buyer decision, however, they still affect the decision outcome.

All three organizations argued that the actual user of the product being bought has a direct influence on the decision since this individual or group of individuals are best trimmed to evaluate the actual product.
Respondent B shared with us that he is considered as being both the actual buyer and the decision maker since he has the formal authority and responsibility for choosing supplier and also the one taking the final decision. However, according to Respondent A, there is a thin line between the actual buyer and the decision maker in his organization but still there is a difference.

The actual buyer is the one making the purchase but the decision maker is individuals higher up in the organization hierarchy who would make the actual decision to make the purchase. According to all three respondents there are several factors influencing the decision center and thereby also influencing the industrial buying behavior. The conditions of the buying situation [buy-classes, complexity, importance, risk and time pressure] affect the decision making on different levels. The buy-classes [new buy, modified re-buy, straight re-buy] are considered as important circumstances that directly influence the decision center when dealing with a non-radical product, this according to all three respondents. Respondent A and C argued that the buying center searches for more information if they are facing a new buy situation than when faced with a straight re-buy or a modified re-buy. Thereby this information search increases the involvement and influence on the buying center.

The complexity of the product also influences the buying center; however, buying a non-radical product most often means that information is available and the complexity of the product can be thoroughly described and thereby decrease uncertainty within the buying organization (Respondent A, B).

Respondent C also mentioned that the degree of importance affect the number of roles in the decision center. All three respondents mentions that if they experience greater risk with the purchase the degree of involvement in the buying center increases, however, if there is a high time pressure the degree of involvement decreases because involving more people would mean a more time taking process.

According to Respondent A, an individual’s personal characteristics also influence the decision center. [S]He described himself as an individual with personal experience of purchasing and has a great motivation to participate and influence the buying center. However, Respondent B argued that even though [s]he is newly hired [s]he still feels motivated to participate in the decision making, and has a great experience of buying in other organizations. One other factor that was described by all three respondents as less influencing in the decision center is the level of centralization, specialization, and standardization.

Master thesis: Industrial buying behavior and radical innovations
However, the other parts of the organizational structure [size, and formality] were described as very important and influencing factors. The size of the organization determines the size and complexity of the buying center and was described by all three respondents as a main factor influencing the decision center and thereby the decision outcome. Respondent A and B who works at larger organizations described the size of their buying center as relatively complex and broad, while on the contrary Respondent B, working at a smaller organization, described the buying center as small and not complex and this was due to the size of the organization being relatively small.

One of the most in common arguments shared by all three respondents is the level of formality and its importance and influence on the buying center. The different types of formalities such as rule and policies are considered as highly important to investigate and they have a direct impact on the buying center and thereby on the decision outcome. Even though we are dealing with a non-radical product, most often there are certain rules and strict policies in this specific market (Respondent B, C)

### 4.2.4 Radical - Decision center – roles and influencing factors

When it comes to the roles in the decision center they vary a lot when faced with a radical product innovation. Respondent C argued that the thin line between the actual buyer and the decision maker becomes much more visible since the final decision of buying a radical product always is made by individuals very high up in the organizational hierarchy.

The respondent also mentioned that the actual initiator is most often the selling organization taking the initiative by offering a radical product that will satisfy a need and not an individual within the buying organization.

All three respondents argued that the role of the users becomes more vital since they are the ones that will evaluate if the radical product actually works and satisfies the organizational need. With a radical product there are no other references to other organizations and their implementation of it which mean that they need to conduct their own investigation, which thereby leads to more people involved to create an idea of this radical innovation. Respondent B shared with us that usually when the complexity is high it means that there is a need for more departments to be involved because it will most likely affect them.

"The more complex, the more time it will take." (Respondent C)

**Master thesis:** Industrial buying behavior and radical innovations
Respondent B argued that more people are involved in the whole process, people with specific knowledge in regards of the products and also someone from a higher level within the organization would be a part of it.

The complexity of the buying situation and the importance of the product increase the involvement of individuals in the buying center. These factors in combination with the fact of buying a new radical product involves greater financial and functional risks contributes to a longer decision process and thereby the time pressure is not longer relevant (Respondent A and B). However, according to Respondent A, the personal experience plays a key role when facing a radical product since having years of experience in terms of buying both radical and non-radical products increases the possibility of a successful evaluation and purchase and thereby might involve a shorter decision process.

The level of centralization, specialization, and standardization are described as being similar to the situation with a non-radical product; less influencing.

4.2.5 Attitudes towards radical innovations

Respondent A and C stated that they do not prefer to be in a position where they have to make decision about products which are of a radical nature. If a choice is presented, they would avoid the radical innovation.

“Usually you try to work with products [materials/substances] that are safe [tested and known] and you do not want be around such innovations [radical]”

(Respondent A)

Respondent C argued that they avoid because of the financial and the functional risk of the product. Company B on the other hand states that they see it as a possibility.

“If it something that could make our organization/operations more efficient, then we are certainly interested. We see this scenario as something positive!” (Respondent B)

This situation is also described by Respondent D who argued that smaller organizations in the Life Science industry have most often less financial power and the need to expand and take market shares is crucial in order to survive. This means that these smaller organizations are in greater need for new product innovations that will contribute to their increased profitability and efficiency. (Interview 4)

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4.3 Suppliers Criteria

The supplier criterions are presented in the two tables below. The first table presents the respondents answers when faced with a non-radical innovative product while the second table concerns radical products. These answers reflect what the organizations consider as being important when selecting their supplier.

4.3.1 Non-radical

Rating 1-5 (1; Not important, 2; Less important, 3; important, 4; More important, 5; Most important)

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<td>Price</td>
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<td>Product Quality</td>
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<td>Earlier experience with supplier</td>
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<td>Suppliers history and competence</td>
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<td>Accessibility to information</td>
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4.3.2 Radical

Rating 1-5 (1; Not important, 2; Less important, 3; important, 4; More important, 5; Most important)

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<td>Supplier flexibility</td>
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<td>Possibility to compare with other products/services</td>
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<td>Guarantees of results</td>
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<td>Accessibility to information</td>
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Master thesis: Industrial buying behavior and radical innovations
5. **Analysis**

5.1 **Buyer behavior process**
The industrial buyer behavior theory defines three different types of “buys”; (1) New buy, (2) modified re-buy and (3) straight re-buy. A new buy happens when the buyer purchases something that the organization has no previously experience of (ibid). At first hand you might identify a radical innovation as a new buy. But as defined in the theory the process when a new buy occurs is concerned with collecting information from various sources regarding the product and alternatives to it, explore alternatives to the offered service and evaluating alternatives (Reeder et al. 1991). But when faced with a radical innovation there is no information from alternatives sources such as reviews or similar products. Regarding the three different types of buys it is useless to compare the outcome of a radical buy of an organization with a straight re-buy or modified re-buy.

A radical innovation suffers from lack of available information even if the supplier who is providing the radical innovation has great amount of information it is still not recognized within the market yet, which makes the buying part skeptic towards it (Leifer, 2000). Only after it has been tested by different sources, a great amount of information will be available from other sources than the organization which supplies it. The buying organizations in this thesis are confronted with a radical innovation which *has no or very little information available except from the actual supplier*. If it would have been in a situation with a modified re-buy or a straight re-buy it would have gone through testing within these organization and therefore a great amount of information would be available. The new buy process consists of eight different steps [Fig 5]. When reviewing the empirical findings we identify that the process itself is alike in both situations when compared to the theory. The radical new buy does not differ from the non-radical new buy – the process – the steps are the same. But when analyzing what goes on *within* the process – within the different steps – differences are identified.

The first step concerning *identify need* [step 1] show that there is a difference depending on how the problem is being identified. When the organizations are searching for a need internally and they have still not yet decided what kind of product that could fulfill their need they are not very keen to continue the process.

*Master thesis: Industrial buying behavior and radical innovations*
If it is a salesperson who approaches them and attempts to sell a product of a radical nature the larger organization tends to decline the salesperson while the smaller organization shows more interest.

“...then we are quite slow, if not extremely [regarding listening to salesperson if they try to pitch “a sale”]” (Respondent A)

“...if it is regarding a product [service] that will bring better efficiency to our operations then we are interested. We see this as something positive.” (Respondent B)

For define criteria [step 2] and product specifications [step 3] the process according to the empirical findings compared to the theory are the same and no specific differentiating behavior could be identified. When searching for suppliers [step 4] who can provide the required product the buying organizations tries to find a product that has already been tested and are provided by a number of different suppliers that preferably has been approved since before.

“Yes exactly, that is how we do, get more offers [to choose from]” (Respondent B)

“...you want to play them against each other, do a reversed action...for the price” (Respondent A)

As the products becomes more complex the more people within the organizations who are involved in the buyer process increases, just as the theory of industrial buyer behavior foretells. Even if the complexity increases the organizations shows strong signs of being more eager to turn towards suppliers that they have worked with before. The reason to this is the regulations that are laid on this market and the lower risk.

“...the more complex, the more involvement from other departments.” (Respondent A)

“...there are approved suppliers and there are strict regulations of what and how much we can buy..” (Respondent B)

Organizations within the Life-science sector are required to document their processes in a specific way, handle and document usage of materials or products, but also it is to make sure that the products/materials/services used are safe for the end consumer. Therefore, the organization are more prone to turn to suppliers which they have worked before with – which have been tried and validated and is considered to be a safer choice. By doing so, they aim to lower the functional risk and secondarily the financial risk which both are perceived to be much higher with a radical innovation.

“... maybe not as much financial risk but more functional risk ” (Respondent A)

“...in these cases we do rigorous reviews and then measure the financial risk and then the functional risk. Form this we ask ourselves will this product work and does it fulfill our demands?” (Respondent B)
However, a difference is noted between the two big organizations and the small one. The small organization seems to be more likely, in our case, to turn to a radical innovation if it might improve their product in ways of cutting cost or being more efficient, even if the risks are higher. This is supported by Respondent D, where he stated that it is these small firms that are more interested in innovations overall because they have more to gain from it than the larger ones (Interview 4). After this step they turn to analysis of offers [step 5]. The process is the same if it is compared how the organizations would proceed within this step, according to the theory. The differences are shown when it comes to how much information is available about the specific product. As information is available, this process is straightforward – the organizations try to get the best product for the cheapest price, which is in line with the behavior predicted in the industrial buyer behavior theory. But when information is low, as in our case, a different scenario emerges. The organizations now have to make their own research, test and evaluate the offers to find a product that fits them. This is not only time-consuming but also something that increases the functional and financial risk for the buying organizations, as the product is for them is unknown. The behavior changes towards being more eager to try the safer choice than the untested because of the possibility of a negative result [functional risk]. But in our empirical finding the smaller organization is, still, more prone to turn toward a radical innovation than the larger ones. As we stated earlier the smaller one benefits more form this than the larger ones and this is supported by the interview with Respondent D who highlighted the issues of being a smaller organization within the life-science market.

“Small organizations don’t have the same possibilities to outsource parts of their organizations as the bigger ones.” (Respondent D)

After this, the organizations turns towards choosing their supplier [step 6]. When being compared to theory, the differences between a non-radical buy and a radical buy are absent. The behavior of how to select supplier is the same but the small differences that appears are which criteria’s they put emphasis on (see part 5.3). The next step is routine for ordering [step 7]. The situation of deciding how to put in orders to the supplier for upcoming re-buys doesn’t alter between a non-radical buy and a radical buy. In this step the organization shows that they have gathered enough data to become more secure with the product and therefore don’t need to alter the process for different situations. The last step is the evaluation of the order [step 8], product and the routine for working with this organization. No differences are identified if the products where of a non-radical or radical nature.

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5.2 Decision center- roles and influence

The decision center, as described in the industrial buyer behavior theory, can be a very complex environment consisting of numerous individuals having different roles (Webster & Wind, 1972) and this was confirmed when investigating our research subjects. However, the size and structure of the decision center vary depending on the situation at hand. The authors Samaniego & Cillian (2004) described the factors influencing the decision center and thereby the decision outcome. In our case, when analyzing the research subjects we identified vital information surrounding the different factors influencing the decision outcome in a situation with a non-radical product and on the other hand in a situation with a radical product.

The gathered data from our research subjects clearly shows that the conditions of the buying center described in the theory as the buy-classes, risk, complexity, importance and time pressure influence the decision center and the decision outcome. The different buy-classes influence the decision center differently. A straight-re-buy or a modified-re-buy is considered by the respondents as a less complex situation and the decision process is thereby described as shorter. On the other hand, a new buy situation involves more information search, product evaluation and supplier evaluation, which in turn lead to a longer decision process. However, when dealing with a radical product the buying scenario is always a new buy and never a re-buy. Therefore, when dealing with radical products the two buy-classes (1) straight re-buy and (2) modified re-buy becomes useless and are not applicable in this situation. Respondent B mentioned that the importance and complexity of the decision to be made affect the size and structure of the decision center. When faced with a non-radical product the buying situation is less complex and involves lower functional and financial risks, which in turn lead to a situation where one single individual can hold all or most of the roles in the decision center. Respondent C argued that when faced with a radical product the situation becomes more complex and the importance of the decision increases, which in turn lead to increased involvement from individuals higher up in the organizational hierarchy and thereby a longer decision process.

“The more complex, the more time it will take” (Respondent C)

This situation where complexity increases results in that the buyer has to proceed with great caution due to the increased functional and financial risk. The buyer becomes thereby more careful and the need for information increases in order to reduce uncertainty and avoid functional errors. This behavior can be seen in all of the respondents, involving more individuals in the decision center when dealing with a radical product.
According to all three respondents, individuals in chief position within the company have the formal authority and take the final decision when standing in front of buying a radical product. This is done in order to decrease the possibility for failure and decrease possible risks. When analyzing this behavior we could see indications of greater uncertainty and skepticism towards radical products in the two bigger organizations.

"Usually you try to work with products [materials/substances] that are safe [tested and known] and you do not want be around such innovations [radical]” (Respondent A)

This skeptic behavior of Respondent A and C can be perceived as contradicting since Respondent D, research organizations and authors state that new product innovations are the key elements contributing to the success of organizations within the Life Science industry (Tidd et al 2005; http://www.suls.se, 2011.05.15). Although innovations are according to research crucial for this particular market there is skepticism towards buying new innovative products. When investigating the buyer behavior in the two bigger organizations we could identify that radical innovative products are dealt with great caution and skepticism due to the high uncertainty and possible functional and financial risks. On the other hand, the smaller company had a positive view and saw radical products as a possibility to increase efficiency and become more effective.

"If it something that could make our organization/operations more efficient, then we are certainly interested. We see this scenario as something positive!” (Respondent B)

The underlying reasons to this personal positive attitude are described by Respondent B as the need for smaller organizations to become more effective and expand, which in turn lead to the continuous search for new product innovation that can increase their profitability. These findings indicate that the individual personal characteristics and attitudes have a great influence on the decision center and the decision outcome. The theory also describes the so called users as being most trimmed to evaluate the product and this is also being confirmed by all of the respondents describing the users’ role as extremely vital. However, the respondents describe the users’ role as more crucial in a situation with a radical product due to the high functional risk of a radical product. The user can evaluate the radical product being bought and decide whether it fulfills the requirements and is appropriate and useful for the organization. Although the users’ role is considered as being more important in the case with a radical product it doesn’t mean that his role becomes useless when dealing with non-radical products.

Master thesis: Industrial buying behavior and radical innovations
The difference here is that the buying organization most often has earlier experience of the actual product in the case of a non-radical product or they can collect valuable information from the supplier or other references. Meaning that there are other individuals besides the user in the decision center that are well trimmed to make this evaluation and calculate the potential functional and financial risk. According to Speakman & Mariarty (1986) (referred by Samaniego & Cillian, 2004) another factor that influences the size and structure of the decision center and the decision outcome, is the time pressure. The authors argue that the degree of involvement and influence reduces when there is a high time pressure. This is according to our analysis a fully correct statement when dealing with non-radical products, but this statement is not applicable in the case with a radical product. All of the respondents argued that the time pressure becomes less influencing when dealing with a radical product, while the degree of involvement and influence is still perceived as high. However, the size and structure of the decision center varies also depending on the size and complexity of the organization and also the importance of the decision to be made. Respondent B, who works in a smaller organization, consisting of only twenty employees, argued that he is the individual occupying most of the earlier described roles in the decision center. The underlying factors to this is described to be the actual size of the organization and the low degree of decentralization which leads to less involvement in the decision center from various departments. However, when faced with a radical product innovation the situation changes and the structure of the organization [centralization, specialization, and standardization] becomes less influencing on the decision center. In this case with a radical product other factors such as; size of the organization, importance and complexity of the decision at hand, financial and functional risk, and personal experience, become more influencing on the decision center and the decision outcome.

5.3 Supplier criterion’s

When investigating how the different organizations evaluate their suppliers and which criterions they value the most we were able to identify differences but also similarities between a non-radical product situation and a radical innovation. The most notable and revealing difference between these two situations is the price factor, where price seems according to Respondent A and C to be considered as a less important factor when dealing with radical products.
According to these respondents price is described as less important due to the fact of price being a known fixed cost, but the situation at hand with a radical product is filled with uncertainty and risks which in turn could involve other unknown costs and these are the costs that need to be tackled. This is why according to the collected data the respondents viewed other factors as more important in this situation such as; product quality, the delivery cost, supplier history/competence and supplier flexibility. Other vital factors when evaluating suppliers that differed between a non-radical and a radical product are the possibility to modify the product and the accessibility to information. The buying organization have to be able to modify the radical product so it fulfills the organizations needs and requirements and they also need to have access to valuable information. These factors are considered as being crucial when evaluating potential suppliers in the situation with a radical product innovation in order to be able to reduce the functional and financial risk.

6. Conclusion

The conclusions that can be drawn from this thesis are that there are differences when the buying organization is confronted with a non-radical product and a radical product. Not only does the behavior within the buy-grid framework change but also depending on factors affecting the decision center become more or less influential. When reviewing the buy-grid framework the only buy-class that shows differences is the new buy. The process itself is the same but within the steps differences occurs. The differences occur in different steps in the process. The identification of a need or problem [step 1] shows two different possibilities, either they identify a need internally or a salesperson approaches them, if the salesperson is representing a radical nature two of the larger organizations avoids it while the smaller are interested, compared to if a non-radical solution was offered the larger ones would be more interested. In search for suppliers [step 4] the differences identified is connected with the amount of available information about the product. The organizations prefers the safer choice overall because the primarily issue of functional risk and secondly the financial risk. Company B shows an attitude towards being more prone to accept these types of products. When it comes to analysis of offers [step 5] it differs between non-radical and radical. If it concern a non-radical product the price is important and the buying organization aims to get as many offers as possible, if it concerns a radical innovation it changes towards that price is not as important anymore but instead the supplier itself [according to supplier criterions] needs to be recognized as trustworthy and qualities of the product are in focus.

Master thesis: Industrial buying behavior and radical innovations
In steps 2, 3, 6, 7, 8 no differences are identified. Moving away from the specific process the analysis shows that the size and structure of the decision center is more complex and involves more individuals from different levels in the organization influencing the decision outcome when faced with a radical product. The most notable factors influencing the decision center and the decision outcome when faced with a radical product is the size of the organization, complexity of the product, risk, the importance of the decision at hand and personal experience. However, factors such as time pressure, personal characteristics, and level of centralization, standardization, and specialization are considered as less influencing. The attitudes differ strongly between the two large and the small organization. Criteria’s regarding the product changes when faced with a radical product, price becomes less of importance but instead more emphasize is put on product quality, the delivery cost, supplier history/competence and supplier flexibility, is considered as more important. This due to that price is a known cost but instead the organization focuses on the functional risk of the product. If the product fails to deliver it could mean a stop in production for the buying organization which could result in a costly situation. To conclude, differences in the industrial buying behavior has been identified and investigated. From this we see that when organization face a radical product the main factors that affect their behavior is the amount of information available, the complexity of the product, the importance of the decision at hand, the financial and functional risk, personal influence, and finally attitude. The buy grid framework is not altered in anyway, but instead the variables within the framework are valued differently, as explained earlier.

7. Further research
We believe that there is a need to increase knowledge of how the industrial buyer behaves when faced with radical innovative products. In order to identify a more precise behavior in this specific situation a more large scaled investigation involving more research subjects is needed. A larger study involving organizations with different sizes would be relevant in order to identify possible variables being more influencing than others. In our case, the factors affecting the buying center varied between the different organizations but we have not been able to find any common nominators stating how these factors can differ, and thereby it is crucial to conduct further research on this area.
References

Litterature


Master thesis: Industrial buying behavior and radical innovations


**Articles**


**Master thesis:** Industrial buying behavior and radical innovations


**Internet**

Http://www.suls.se, visited 2011-02-18

Http://www.naturvetarna.se, visited 2011-03-01

Http://www.creativeadvantage.com 2011-04-07

Http://www.cind.uu.se/UppsalabIO.html, visited 2011-02-18

**Master thesis**: Industrial buying behavior and radical innovations
Interviews

**Interview 1:** Head of purchasing, Company A, (2011), Interviewed by: Authors, Length of interview: 1h 16min, 2011-04-04

**Interview 2:** Head of purchasing, Company B, (2011), Interviewed by: Authors, Length of interview: 1h 25min, 2011-04-15

**Interview 3:** Head of purchasing, Company C, (2011), Interviewed by: Authors, Length of interview: 1h 5min, 2011-04-21

**Interview 4:** Chief executive, Consulting Company in Uppsala, (2011), Interviewed by: Authors, Length of interview: 1h , 2011-02-16
Appendix A - Missivbrev

Hejsan!

Våra namn är Fredrik Celion och Arbnor Belulaj och vi är två mastersstudenter som skriver vårat examensarbete just nu, därav detta e-mail. Vi söker kontakt med den som är inköpsansvarig på ert företag för att se om vi kan få tid för en intervju.

En intervju med er är väldigt betydelsefull för vår det vi undersöker och den tar inte mer än 30-45 minuter att genomföra. Denna kan genomföras över telefon eller vid ett personligt möte, beroende på vad som passar er bäst.

Syftet med vårt examensarbete är att undersöka det industriella köpbeteende inom er marknad (life science) och hur processerna och valkriterierna förändras när man som inköpare ställs inför produkter som är av en ny natur (radikal innovation).

Återigen, vi kan inte lyfta fram hur viktigt det är för oss att få kontakt med er angående detta. Vi har genomfört en sökning med kriterier på företag inom Uppsala, inom er bransch och Ni är väldigt efter denna sällning av högt intresse för oss!

Ser fram emot att få höra från er.

Med vänliga hälsningar

Fredrik Celion & Arbnor Belulaj

Studenter vid Uppsala Univeristet

Företagande och ledning

Ni kan nå oss på:

Mobil: XXXXXXX

Email.
Appendix B - Intervjuguide

Grundfakta

1. Vad är ditt Namn
2. Vad är din utbildning och erfarenhet
3. Vad är er roll i företaget?
4. Hur länge har ni arbetat för företag och i din nuvarande roll

Bakgrundinformation

Vad är det som ert företag arbetar med?
Hur många anställda finns det i företaget?
Vad finns det för olika avdelningar inom [företagsnamn]

<table>
<thead>
<tr>
<th>Köpprocess - checklista</th>
<th>Checklista kriterier</th>
<th>Checklista faktorer</th>
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<tbody>
<tr>
<td>→ Identify problem</td>
<td>→ Buyclasses</td>
<td>→ Roles</td>
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<tr>
<td>→ Define criteria</td>
<td>→ Level of complexity</td>
<td>→ Buy situation</td>
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<td>→ Product specification</td>
<td>→ Importance</td>
<td>→ Personal criteria</td>
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<td>→ Search for suppliers</td>
<td>→ Risk (financial/function)</td>
<td>→ Organizational structure</td>
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<td>→ Analysis of offers</td>
<td>→ Time pressure</td>
<td>→ Organizational size</td>
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<td>→ Choice of supplier</td>
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<td>→ Routine for ordering</td>
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<td>→ Evaluation</td>
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Forskningsfråga 1

_Hur ser ett köpbeslut och dess processen ut vid köp av en icke-radikal produkt._

Kan Ni beskriva hur Ni går tillväga vid ett inköp av en produkt?  
→ Finns det rutiner för detta? Hur ser dem ut? Kan ni beskriva ett exempel?

Återfinns det några omständigheter vid ett köp som kan påverkar eft beslut?

Vid ett köp av en tjänst/produkt, tittar ni på alternativa lösningar i sådant fall? Varför?

Ungefär hur lång tid tar det för er att köpa en produkt? (Från Ni har hittat något till ni har köpt det)? (Skiljer det sig mellan olika typer av köp? – mycket pengar, lite pengar, nya saker mm.)  
→ Skiljer sig detta beroende på köpsituation? (Nytt köp, modifierat återköp och rent återköp)

Finns det någon i ert företag som har i uppgift att samla in uppgifter om/från leverantörer och informera resterande i företaget? (Vid köp, samla information, varför, vem)

Finns det personer som påverkar beslutet av inköp av en produkt som egentligen inte kommer påverkas av själva produkten?

Är det Ni som tar det slutgiltiga beslutet om ett inköp? (Vem, skiljer det mellan olika typ av inköp?)

Hur många är involverade i denna typ av process (standardiserat, varför många?)
→ Om ni är flera, hur ser rollfördelningen ut? Varför är flera involverade?

Används det externa konsulter vid denna typ av inköp? (standardiserade)
→ Varför? (Minska risk, öka information ?)

_Master thesis:_ Industrial buying behavior and radical innovations
Forskningsfråga 2
Hur ser ett köpbeslut och dess processen ut vid köp av en radikal produkt?

Hur ställer ert företag till denna typ av produkter?
⇒ Hur har ni agerat? (Finna alternativa lösningar, konsulter)

Hur upplever Ni denna typ av produkt? (Finansiell risk, Funktionell risk)
⇒ Vad ser/såg Ni för risker

Hur lång tid kan ett sådant inköp ta? (Långre, kortare)
⇒ Varför långre/kortare

Kan Ni beskriva hur Ni går tillväga vid ett inköp av en produkt?
⇒ Har ni någon process eller några specifika faser som ni går igenom innan ni tar ett köp beslut? (Kontroll med kontrolllista)

Vad är viktigt vid denna typ av inköp? (Identifiera kriterier, pris, kommunikation…)

Är det Ni som tar det slutgiltiga beslutet om ett inköp? (Vem, skiller det mellan olika typ av inköp?)

Används det externa konsulter vid denna typ av inköp?
⇒ Varför? (Minska risk, öka information ?)

Ser beslutsprocessen likadan ut som vid en standardiserad produkt?
**Forskningsfråga 1.1**

Vad lägger ni för vikt vid dessa variabler när det kommer till att välja leverantör av en icke-radikal produkt?

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<td>Möjlighet till direkt kontakt med leverantören</td>
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**Master thesis:** Industrial buying behavior and radical innovations
Forskningsfråga 2.1
Vad lägger ni för vikt vid dessa variabler när det kommer till att välja leverantör av en radikal produkt?

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