THE INTERPLAY OF RATIONALITY AND INTUITION IN STRATEGIC DECISION MAKING

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**TITLE:** The Interplay of Rationality and Intuition in Strategic Decision Making

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**BACKGROUND:** When it comes to corporate decision making, the traditional rational model suggests that deliberative analysis yields good results. Thus, when contemplating strategic moves, executives are “required” to conduct deliberative analyses. As today’s business environment is becoming increasingly complex and fast-paced, however, executives often face the dilemma of having to make carefully considered strategic decisions on the one hand and not having enough time on the other hand. Intuition offers an efficient solution in this situation.

**PURPOSE:** The purpose of this study is to investigate how corporate executives employ both rationality and intuition in making strategic decisions under uncertain, complex and time-pressured circumstances.

**RESEARCH METHOD:** We conducted three face-to-face interviews with executives from three companies in Sweden. Each interview lasted around one hour.

**RESULTS:** Drawing on previous psychological and managerial research, we argue that rationality and intuition are better viewed as being complementary rather than separate. Findings from the study suggest that intuition could serve as an effective and efficient means for managers to make strategic decisions; and that intuition indeed plays a role in strategic decision making under complex, uncertain and time limited contexts.

**KEY WORDS:** Strategic decision making, Rational decision making, Intuition, Rationality, Uncertain context
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When we first started to discuss the topic and printed the literature four months ago, May seemed so far away. Today, when looked back to the four-month journey, we realized that, apart from those long nights and arguments, it has been full of joy and fun. Although it was hard, we really enjoyed it and had a great experience. The thesis, for us, is like a symbol representing not only the end of this two-year study, but also the new starting point of our future lives.

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CHAPTER 1 INTRODUCTION

In this chapter, we introduce the reader to the background of our thesis. With an example from the U.S. military, we illustrate the problem areas that draw our interests. Thereafter, we present research purpose and questions of the thesis.

1. INTRODUCTION

1.1 BACKGROUND

“Truly successful decision making relies on a balance between deliberate and instinctive thinking.”

Malcolm Gladwell, Blink, 2005

Each and every one of us makes decisions, sometimes we make small decisions such as what clothes to wear or which books to read, and sometimes we have to make critical ones such as whom to marry or what job to accept. Companies also make decisions. The kinds of decisions which are of vital importance as to companies’ futures are called strategic decisions.

Strategic decisions, defined by Mintzberg, Raisinghani, and Theoret (1976, p.246), are ‘important, in terms of the actions taken, the resources committed, or the precedents set.’ Dean and Sharfman (1996, pp.379-380) describe strategic decisions as “ill-structured, non-routine and complex; and as substantial, unusual and all pervading”. Even though conceptions given by scholars are different, it is no trouble for managers to identify those decisions.

Given the importance of strategic decisions, management scholars have drawn some of the characteristics of strategic decisions. Strategic decisions are usually made by top management of an organization that significantly affect organizational “health and survival” (Eisenhardt and Zbaracki, 1992). They are often associated with different trade-offs and involved with uncertainty and risk, once a decision is made, it is difficult to reverse (Elbanna, 2006).
When it comes to making decisions of such importance, a traditional analytical model suggests managers sit down and collect as much information as they can. Then they are supposed to analyze and interpret the data, formulate alternatives, and draw conclusions based on analyses.

However, time has changed. Decision making in the 21st century will no longer be as clear and direct as it used to be (Etzioni, 1989). Not only is the business environment becoming more complex and ambiguous at a faster pace, but also the traditional decision-making assumptions like clearly defined goals, gathering adequate information are often running at odds with the environment. If an executive ever imagined that he or she could collect enough information to understand the business environment like a textbook, he or she would be likely to end up with disappointments. Countless information is poured into the world every day from everywhere, e.g. the Internet, television, newspaper, etc. which makes gathering “adequate” information a mission impossible. This, in turn, makes traditional analytical decision-making hardly to be fully realized (Etzioni, 1989).

1.2 Problem Discussion

When making decisions, managers usually take it as a given that the more information they have, the better off they are. Spending more time and collecting more information seem to be working fine and yield positive results when the environment managers encounter is relatively stable (Fredrickson, 1984; Fredrickson and Mitchell, 1984; Fredrickson and Iaquinto, 1989). Rational analysis seems to be a wonderful tool when managers are in such an environment.

Rationalism has long been the central theme of the research in decision making (March and Simon, 1993; Cyert and March, 1992; Dean and Sharfman, 1993; Etzioni, 1989). Even though researchers have found that decision makers are constrained by limited cognitive capabilities and incomplete information and their actions tend to be limitedly rational (Simon, 1957; Cyert and March, 1992; March, 1994), decision makers are still trying to be “intentionally” rational. Formal analysis still remains a central role in strategic decision making processes and business schools’ textbooks.

Today’s business environment is becoming increasingly complex and unpredictable, and modern industrial technology has led to a dramatic increase in the volume of information that managers might have to deal with, which creates a danger of information overload. Thus, complex situations, the ambiguous competing environment, and the overwhelming amount of information may combine to impose a hard time on managers to make strategic decisions. Researchers have found that
more complex or turbulent environments require less rationality (Fredrickson, 1984, 1985; Miller, 1987). Relying too much on rational analysis under such circumstances seems inappropriate. An example from the U.S military provides a beautiful illustration.¹

In 2000, Pentagon introduced a war game called Millennium Challenge; according to its scenario, an extremely anti-American military commander had escaped from his government somewhere in the Middle East and was threatening to drag the entire region in war. He had a considerable amount of support from religious believers and he was providing financial assistance to four different terrorist organizations.

“A general never knows anything with certainty, never sees his enemy clearly, and never knows positively where he is” (Gladwell 2005, p.106). Napoleon wrote this two centuries ago. His point was that wars were inherently complex, uncertain and it’s beyond the ability of the human mind to comprehend all the variables in a battle field. In other words, “War was shrouded in fog” (Gladwell 2005, p.106). However, the fog of war was exactly what the U.S. military intended to challenge. The stated purpose of Millennium Challenge was for the Pentagon to test a series of new ideas about how to fight in wars. Because they believed that with the full benefit of high-powered satellites and sensors and super computers, they would be able to know clearly where the enemies were, and be certain about their actions, and “the fog” thus could be lifted.

Two teams, Blue Team and Red Team, were assembled. Blue Team represented the U.S. military and was equipped with extraordinary intellectual resources. In addition, Blue Team assembled a team of hundreds of military analysts and consultants and software specialists to analyze the enemy’s environment from every conceivable direction - political, military, economic, social and cultural.

Red Team, representing the forces of the broken-away military commander, however, was not given highly advanced technologies and great intellectual resources. The commander of Red Team Paul Van Riper didn’t believe one could ever lift the fog of war and was convinced that war was essentially unpredictable and it was necessary to make decisive and quick decisions under high-pressured and complex circumstances. Millennium Challenge, in other words, was not only a fight between two armies. It was a fight between two polarized military philosophies.

The game began. As planned, Blue Team used all their resources. They acted

¹ Millennium Challenge story was read from Blink—the power of thinking without thinking, by Malcolm Gladwell, Penguin Books, 2005
aggressively, because their huge databases and super computers told them where
Red Team’s vulnerabilities lied, what Red Team was likely to do and how many
options Red Team had, etc. But they had missed one point, the Red Team
commander Paul Van Riper did not act as the computers projected. He did not use
satellites and cell phones; instead, he used motorcycle messengers to communicate
with front line troops in order to dodge Blue Team’s sophisticated electronic
surveillance network. He used lighting system adopted in World War II to let his
airplanes off the airfield without verbal communication between the pilots and the
tower. In the second day of the game, he initiated a sudden air strike against the base
of Blue Team’s navy. After the one-hour assault, sixteen American ships had been
shot down to the bottom of the Persian Gulf and Blue Team suffered a humiliating
failure.

“They were drown to the data...what I heard is that Blue Team had all these long
discussions, they were trying to decide what the political situation was like. They
had charts with up arrows and down arrows. I remember thinking, wait a minute,
you were doing this while you were fighting?” said Van Riper (cited in Gladwell,

Every time Blue Team planned to do something, they had to first sit down for hours
to analyzing all the information that computers had given them. This was not only
time consuming, but also was dangerous in a battlefield.

“If we had had Blue’s processes, everything we did would have taken twice as long,
maybe four times as long. The attack might have happened six or eight days later.
The process draws you in. You disaggregate everything and tear it apart, but you are
never able to synthesize the whole” said Van Riper (cited in Gladwell, 2005, p.144).

What we wanted to convey in our thesis by mentioning this example was not that
rational analysis is less important or intuitive decision making is superior. We think
that both of them are important, but one has to use them in the right context.

It is seemingly obvious that today’s business world is, in a sense, like the foggy
battlefield, e.g. complex situations, the fast-changing environment and the ongoing
financial crisis. When making strategically important decisions, it is becoming clear
that managers should not only consider the rational analytical approach, but also
take their intuition into account. We will to discuss more about this area in our
thesis.
1.3 **PURPOSE AND RESEARCH QUESTIONS**

The purpose of the study is to investigate how managers employ both rationality and intuition to make strategic decisions under uncertain, complex and time-pressured environments.

According to the purpose, we have formulated three research questions. In order to research rational and intuitive strategic decisions under circumstances described above in an organizational context, the first question we need to ask is

- Under uncertain, complex and time-pressured contexts, could intuition be an additional way for managers to make strategic decisions?

There are also other questions related to this purpose that we need to ask,

- What is the relationship between rational and intuitive decision making under the contexts described above?
- What are the benefits associated with intuitive decision making?
CHAPTER 2 METHODOLOGY

In this chapter, we will describe our view toward scientific approach and in what way this view affects our research. We will explain which research methods we have adopted for our research and the type of study to which our research belongs. We will also present the methods that we have used to collect our empirical data and explain why our research is credible in the end.

2. METHODOLOGY

2.1 SCIENTIFIC APPROACH

As the traditional two schools of scientific ideals, positivism and hermeneutics have been often discussed among the several different scientific approaches. Started from 19th century, the view of positivism was first developed by the French sociologist Auguste Comte (Easterby-Smith, et al., 2008). The basic idea of positivism is that the social world exists externally, in order to understand the properties of the existent, it should be measured through objective methods, rather than being inferred subjectively through sensation, reflection or intuition. This ideal believes that reality is an objective construction which is independent of human interpretation. As an “absolute objective method”, in order to build reliable scientific facts, it is important to separate interpretative sensation, reflection or intuition (Easterby-Smith, et al., 2008).

Comparing to this, the other school, hermeneutics focuses on the understanding and interpretation. As a subjective approach, traditional hermeneutics mainly referred to the study of the interpretation of how to write and organize texts. But with the deepening development, contemporary hermeneutics consists of not just issues involving the written text, but everything in the interpretative process which includes verbal and nonverbal forms even aspects which impact communication, such as pre-understandings (Ferguson, et al., 1988). Opposite to positivism, hermeneutic seeks to understand the different parts in their right context by using a holistic view, and try to understand the whole of the problem.

2.1.1 OUR VIEW TOWARD SCIENTIFIC APPROACH

This thesis stands mainly on the approach of hermeneutics. Two main reasons support
us.

First, we believe that nothing could be viewed or analyzed absolutely objectively. Everything is under its special context and perceived differently. We cannot ignore the inextricable linkages among different factors in a unique context. However, this does not mean that we will ignore the positivism approach. We will try our best to maintain the view of objective by keeping an open mind and conducting our research by using more rational and reasonable methods. One thing that should be pointed out is that, the pre-understanding or experience of the authors may influence interpretations.

Second, as an objective ideal, positivism does not always true especially in the contemporary research of strategic management. When talking about strategic management, the multiple influences of the context, content and process could be seen as the basic ideas in this area. We could not discuss any single topic separately. It is suitable here to apply the ideas of hermeneutics, that is, to analyze a problem by putting it into a context. Especially in this paper, we are trying to analyze the strategic decision making paradigm under an uncertain environment.

Thus, strategic decision making could not be analyzed without certain contexts. Adopting the view of hermeneutics, we define the general uncertain, complex and time-pressured context, and try to find out the relationship between bounded rationality and intuition in such a context, and to find out how the top management makes rapid strategic decisions by using the combined model of bounded rationality and intuition in practice.

2.1.2 Research Methods
One of the most seemingly obvious characteristics of a scientific research, whether it is a master’s thesis, or a dissertation, is that there are theories involved. The way one introduces one’s theory may differ. One may start with a theory, and then go and collect empirical data in order to test it; or one could start with observing and collecting empirical evidence, and then draw one’s own theoretical foundation based on observations. Which way one chooses to introduce a theory depends on which research method one has adopted. There are two different reasoning methods, namely, deduction and induction.

Deduction
Deduction is a conclusive form of reasoning, that is, the conclusion must necessarily correspond to the reasons given (Blumberg, et al., 2005). This form of reasoning requires a strict link between reasons and conclusions than in induction. For a deduction to be true, two conditions are of crucial importance, 1) reasons given for the
conclusion must agree with the real world (true); 2) the conclusion must necessarily follow from the reasons (valid) (Blumberg, et al., 2005).

**Induction**

Inductive argument is different from deductive reasoning. It does not ask for as a strong link between reasons and conclusions as deduction requires. To induce something is to draw a conclusion from one or more facts or pieces of evidence. The conclusion explains the facts, and the facts give rise to the conclusion (Blumberg, et al., 2005).

**2.1.3 Our Research Methods**

Different research methods usually attach to different philosophies, deduction is more related to positivism and induction to hermeneutics (Saunders, et al., 2007). Since, as noted earlier, our research philosophy is more toward an interpretive perspective, our research approach then is more likely to be induction.

Saunders, et al. (2007) argue that which research approach to choose is somewhat dependent upon the research topic. If there is lots of existing literature about the topic upon which one can define one’s own theoretical framework and a hypothesis, then it is preferable to use deduction. Whereas, when one’s topic is fairly new and there is little existing literature to draw upon, then it is better to work inductively by gathering data to develop a theory. Since our topic addresses the role of intuition in strategic decision makings in more time-pressured, complex situations, and there is little existing literature about the topic, so it is more appropriate for us to work with an inductive argument.

Specifically, in order to grasp a more holistic view of the interplay of bounded rationality and intuition, we start our research from the contemporary business context. When we first thought about the topic, a particular phenomenon drew our attention, today’s fast-changing business environment requires managers to make fast strategic decisions, but operating under time-pressured, complex situations with incomplete information makes it hard to make such rapid decisions. Starting from this interest, we framed our research questions. Then, we reviewed and surveyed the predominant theories in the theoretical area of strategic decision making in order to create our theoretical framework and try to answer our research questions from a theoretical perspective. Further, we worked on the empirical perspective and collected data by conducting three interviews in Corren, Syntronic and BT. After analyzing the data from these interviews, we tried to compare the answers in order to find out the similarities and differences between theoretical and empirical perspectives and finally drew our conclusion. Thus we consider our research to be neither strictly inductive nor deductive. We believe that this process of organizing
thesis has mainly an inductive nature but also has the component of deduction.

2.2 **TYPE OF STUDY**

The positivistic and the hermeneutic approach in social science have given rise to two distinguishable types of study, namely, the quantitative and the qualitative study. A quantitative type of study, which roots in the positivistic scientific approach, relies on quantitative information (i.e. numbers and figures), and is usually well organized. On the other hand, a qualitative type of study, which finds its origin in the hermeneutic scientific approach, counts on qualitative information (i.e. words, sentences and narratives) (Blumberg, et al., 2005).

One cannot tell whether quantitative studies or qualitative studies are better or more useful. They are all better and useful in some way. In management studies, there is no such clear predominance of qualitative or quantitative studies (Blumberg, et al., 2005). It is increasingly advocated within the business and management research that a single study may use both quantitative and qualitative techniques and procedures as well as use primary and secondary data (Saunders, et al., 2007).

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2.3 **EMPIRICAL DATA COLLECTION**

Three qualitative interviews take the role of empirical data collection in this thesis. Specifically, by introducing the main methods of collecting data, we will further describe the detail method and procedural of how we designed the interviews.

2.3.1 **METHODS OF COLLECTING DATA**

As we mentioned, based on hermeneutics approach, this paper is to be mainly of a qualitative nature. Thus, following this approach, we will collect qualitative data in this thesis. Comparing to quantitative research, qualitative research is characterized as: “1) based on meanings expressed through words; 2) collection results in non-standardized data requiring classification into categories; 3) analysis conducted through the use of conceptualization”. (Saunders, et al., 2007, p.471) There are several methods of collecting qualitative data, such as observation, interviews, questionnaires and secondary data.
In this thesis, we choose interview as our main method of collecting empirical data, and two reasons support us: first, according to the research questions, intuition is very difficult to be described using exact numbers or figures due to its subjective nature. Thus, interviewing enables us to have a face-to-face communication with the interviewees and lets us interact more with them in order to gain better understanding of the subject. Questionnaires and secondary data could not provide such an opportunity.

Second, strategic decisions are of crucial importance to an organization’s future health and which are mostly taken by the top management. Hence, in order to collect the empirical data from the top management or the CEO, we consider interview to be the best and most appropriate method.

Even though we have chosen interview as our main source of data collection, we also used secondary data as the complementary method to get more information regarding the companies in which we conducted in the interviews.

2.3.2 The Design of the Interviews

There are several different categories of interviews, but the main typologies are distinguished as structured, semi-structured or unstructured/in-depth interview, and standardized or non-standardized interview. Overlap exists among these typologies, but each typology contributes the relative understanding of the overall nature of interview (Saunders, et al., 2007).

Structured interview is defined as “using questionnaires based on a predetermined and standardized or identical set of questions and we refer to them as interviewer-administered questionnaires”. (Saunders, et al., 2007, p.312) That is to say, structured interview is a kind of standardized interview which is mainly used for collecting the quantitative data. Contrarily, semi-structured and unstructured (in-depth) interviews are non-standardized interviews. And they usually take the roles of qualitative data collection and research. Saunders, et al. (2007, p.312) defined the semi-structured interview as “the researchers will have a list of themes and questions to be covered, although these may vary from interview to interview”. This means that under the common direction and the purpose of the interview, specific questions maybe differ or vary in different context of the interviews or particular conversations. Unstructured interview is defined as “informal interview. You would use these to explore in depth a general area in which you are interested”. (Saunders, et al., 2007, p.312)

We conducted these three interviews in the following sequence: first, an interview with the CEO of Syntronic AB (Syntronic for short in the following), the second
Interview was with the vice president of BT Products AB (BT for short in the following), and the third interview was with the previous CEO of Östgöta Correspondenten AB (Corren for short in the following). The interviewees from Syntronic and BT are members of the top management of their respective companies, and the other interviewee was the former CEO of Corren. They either are responsible or had been responsible for making strategic decisions for their company. These three companies are located respectively in Gävle, Mjölby and Linköping in Sweden. These three interviews were all hold by English. But it is neither our native language nor the person’s we interviewed. Thus, this may lead to some misunderstanding which we are not aware of and at last may affect the result of these interviews.

Considering the different contexts of the companies, we conducted these interviews in a non-standardized and a semi-structured way. We had prepared a general and common interview proposal with the same background, purpose and general questions to these interviewees before we interviewed them. However, based on different circumstances of each interview, we changed or varied the detailed questions or sometimes changed the sequences of the questions during the process of the interviews. We were interested in finding out the relevant materials which were capable of giving the answers to the research questions, but not in persuading the interviewees to accept our theoretical opinions.

2.3.3 Interview Procedures
Before we went to the interviews, we had sent our interview proposal to these interviewees. By pre-reading the interview proposal, the interviewees might get to know the main purpose of our interview, the theoretical area of strategic decision making and the general questions. Thus, to some extent, they might have prepared the interview, such as thinking about the general answers of the interview, the relevance between their experience and the interview and so on.

Then we went to these companies and had face-to-face interviews with the three top managers. Each of these three interviews lasted around one hour. During each interview, we had the following common phases: 1) brief introduction of the background and the purpose of the thesis; 2) asking for permission to record the interview which they all approved; 3) asking detailed questions based on the interview guide. After each interview, we transcribed the audio records.

2.4 Credibility of the Study
Saunder at al (2007: 149) cited the Easterby-Smith’s definition of reliability and defined that “reliability refers to the extent to which your data collection techniques or analysis procedures will yield consistent findings”. We believe that both the
research procedure we used to organize this paper and the approach we have taken to interpret our research have impacts on the credibility of our study. Our work paradigm has largely influenced the outcomes and the quality of this paper, and finally influenced the credibility of this study. We could not say that the way we are working is absolutely right or wrong, due to each way has its own advantages and disadvantages. However, we could say that we always try to use as objective methods as possible to organize the whole procedure of this paper in order to avoid subjective guesses and misunderstanding, and finally to increase our credibility of the study both from the theoretical area and from the empirical analysis.

Throughout this paper, we have tried to present all lines as clear and logical as possible, and to make all things we have presented reasonable. We believe that clear logic could make the reader better understand the thesis. We have also tried to avoid the take-it-for-granted attitude. In order to achieve this, in the theoretical part, we have tried to use more relevant references to illustrate our opinions and also in empirical area, we have taken a holistic view trying to get the whole meaning of the data by putting them into contexts. These could all to some extent increase the credibility of our study.

In the empirical interview of our study, the three companies in which we conducted interviewes, Corren, Sytronic and BT strongly represent different types of companies in reality.

First, top managers from Corren, Syntronic and BT all admitted that they have been in the context of uncertainty, complexity and time pressure. And the purpose of these interviews was to test in such defined contexts how top managers in Corren, Syntronic and BT make strategic decisions by using both rationality and intuition. Thus, we believe that the conclusions of this thesis could represent the other companies in which strategic decisions are taken in the same contexts as previously defined.

Second, these three companies in which we conducted interviews, Corren, Sytronic and BT could stand for different sizes of companies. In sequence, Corren is a local company in Sweden, Sytronic is an international company which has four R&D parts around the world (e.g. Kuala Lumpur, Malaysia and Beijing, China) and BT Product Company is one and an important component in the global Toyota Motor Corporation. The purpose of choosing different sizes of companies to interview is to increase generalizability and relevance of the thesis’s conclusions for other companies.
The purpose of this chapter is to provide a theoretical framework of our research area. We will introduce the reader to the theoretical foundation of strategic decision making before we move on to the review of the major paradigms in the strategic decision making literature and the rational decision making model. Thereafter, we continue with a discussion on the intuitive decision making. This chapter will end with a discussion combining both rational and intuitive decision making.

3. FRAME OF REFERENCE

3.1 STRATEGIC MANAGEMENT

There are two research domains within the strategic management field, namely, content research and process research (Pettigrew, 1992; Van de Ven, 1992). The strategic content research attempts to explain the firm’s strategy in terms of, for instance, positioning or portfolio management. Strategic process research emphasizes the procedural nature of strategy and deals with the process in which strategies are created and implemented. Adopting Pettigrew’s (1992) view, process research and strategy is essentially concerned with choice process (strategic decision making) and implementation processes (strategic change). We put our focus on strategic decision making process.

3.2 STRATEGIC DECISION MAKING

As the central issue among strategic process theory (Eisenhardt and Zbaracki, 1992), strategic decision making has its unique characteristics compared with operational decision making. Mintzberg, et al., (1976) define strategic decisions as: “committing substantial resources, setting precedents, and creating waves of lesser decisions”, which is to say, comparing to operational decision making, that strategic decisions are performed by the top management and normally with regard to the vital and unusual issues (Stahl and Grigsby, 1992). Fredrickson (1985) states that strategic decision making focuses on those infrequent decisions that commit firms to actions which will have significant effects on their long-term performance.
With the development of strategic management, many scholars found the important role of strategic decision making in organizational performance. And more and more researchers conducted research in the area of strategic decision making. Eisenhardt and Zbaracki’s (1992) reviewed dominant paradigms in the strategic decision making literature, i.e., rationality and bounded rationality, politics and power, and garbage can. In line with their research, we will briefly review the dominant strategic decision making paradigms and explain the theoretical standing point of our research in the following text.

3.2.1 REVIEW OF THE DOMINANT PARADIGMS OF STRATEGIC DECISION MAKING
March (1994) concluded in his book, A Primer on Decision Making, that there are two basic logics to making a decision, the first one is choice based, namely ‘a logic of consequence’ which means making choice among alternatives by evaluating their consequences in terms of prior preference. The other one is rule based, namely ‘a logic of appropriateness’, which means fulfilling identities or roles by recognizing situations and following rules that match appropriate behavior to the situations they encounter. Following this, two schools dominate in the strategic decision making theory. The first is analytical/intellectual school with the outstanding development of normative rational model, such as ‘rational decision making model’ (March and Simon, 1993), sometimes refer as ‘the synoptic or comprehensive model’ (Fredrickson and Mitchell, 1984). Behavioral/ political school refers to the political perspective such as power, conflicts and coalitions (March, 1994). In the following part, we will simply review these two dominate schools of strategic decision making and clarify our theoretical standing point of the research.

RATIONAL AND BOUNDED RATIONAL DECISION MAKING
Rational action is following the assumption that when encountering decision-making situations, decision makers have clear purposes and are able to gather appropriate amount of information, carefully compare different alternatives and evaluate estimated consequences and choose an optimal option (March, 1994). For example, Simon’s identification, development, and selection model is a simplified version of this rational mode (Eisenhardt and Zbaracki, 1992). However, with the gradually deepening research of human behaviors and strategic process, Eisenhardt and Zbaracki conclude that three main variations have emerged within the rational model. The first variation is cognitive limitation, which identified by several empirical studies. These researchers demonstrated that goals are unclear and shift over time. People often search for information and alternatives haphazardly. The second variation of the rational model accepts the model, but reveals that steps in the model could be repetitive and vary over time depending upon different decision characteristics. The third variation presents the ideas of moving along the rationality and the bounded rationality continuum (Eisenhardt and Zbaracki, 1992).
With the passage of time, “the original debate, which shaped the paradigm, over whether decision makers are rational or boundedly rational is no longer very controversial” (Eisenhardt and Zbaracki, 1992:22). Rationality and bounded rationality are not two contradictory extremes, but a balanced dichotomy or continuum. Further, as Fredrickson wrote: ‘the executives’ approaches were rational and intuitive simultaneously (Fredrickson, 1985). A sound strategic decision should be based on a realistic view, which not only concerns the rational part but also pays attention to the cognition part which consists of insight and intuition.

**Politics and Power**

This perspective shifts attention to those larger systems and considers a set of ideas about decision making involving multiple actors. In this way, this paradigm is often regarded as ‘political’ or ‘conflictual’, because decision makers have inconsistent preferences or identities (March, 1994). Furthermore, March (1994, p.139) argued that “inconsistencies lead to complications, and one common instinct of theory of multiple actor decision making is to see the decision making problem as that of converting inconsistent partnerships into teams by aligning preferences and identities. That leads to concerns with contracts, incentives, selection, socialization, and attention that seek to remove or reduce inconsistencies.” Following this logic, paralleling with other perspectives in the strategic decision making arena, the political perspective “lies in the political science literature since 1950s” (Eisenhardt and Zbaracki, 1992, p.22). During this period political perspective started to form a view of decision making in government which “emphasized the conflictual nature of the legislative process. The decisions were the result of a process in which decision makers have different goals, come together through coalitions, and the preferences of the most powerful triumph”. (Eisenhardt and Zbaracki, 1992, p.22)

By reviewing the literature, Eisenhardt and Zbaracki (1992) conclude three basic ideas of political strategic decision making. First, organizations are political systems, that is, organizations consist of diverse conflicts due to different interests and talents. Second, decisions are the preferences of the powerful. Lots of research and empirical evidence proved that powerful people are always the winners, and the final choices reflect the preferences of the powerful people. Third, people at least sometimes engage in politics. Sometimes politics involves tactics of information; sometimes it emphasizes the tactics of timing and opportunism. For example, the concept of ‘logical incrementalism’ by Quinn (1980).

**3.2.2 Our Theoretical Standing Point**

With the deepening development of each paradigm in strategic decision making theories, more researchers have found that it is necessary to have a synthesis of the
paradigms due to strategic decision makers are rational in some ways but not in other ways (Eisenhardt, 1989), and they are simultaneously engaging in political systems which full of conflicts and different preferences. Lots of conceptual and empirical work indicated the recent tendency to an integration of analytical/intellectual and behavioral/political processes in strategy making (Fahey, 1981), which Eisenhardt and Zbaracki (1992, p.31) describe as, “strategic decision making is best described as a combination of boundedly rational and political insights”. On the one hand, with cognitive limitations, strategic decision makers are boundedly rational. On the other hand, strategic decision makers are political and engage in the politics of organizations and the most powerful ones win and finally make the decisions.

Following such synthesized ideas, some researchers further explore the speed of strategic decision making (e.g. Eisenhardt, 1989; Hickson, et al., 1986). Eisenhardt (1989) summarizes the perspectives on how rapid strategic decisions are achieved. She argues (1989, p.544) that the first research stream of rapid strategic decision making emphasizes that “a high level of comprehensiveness slows the strategic decision process”. Following Fredrickson and Mitchell’s (1984, p.399) definition, comprehensiveness is a “measure of rationality and refers to the extent to which organizations attempt to be exhaustive or inclusive in the making or integrating of decisions”. The second view of rapid strategic decision making emphasizes that decision making can be speeded by the limited participation and centralized power. The third view of rapid decision making is that decisions are speeded by limited conflicts.

Further, by reviewing the main paradigms of strategic decision making, Eisenhardt and Zbaracki (1992) suggested a broader agenda which creates a more realistic view of strategic decision making by opening up the conceptions of insight, intuition and emotion. More and more researchers found that executives are simultaneously rational and intuitive (Fredrickson, 1985). Managers are rational in some ways, but not in other ways especially when they are in a fast-changing and uncertain environment.

Based on the theory of strategic decision making, in order to better analyze our research questions, we choose our theoretical perspective as follows:

(1) Following those streams of rapid strategic decision making, this paper chooses the first stream---levels of comprehensiveness, as our theoretical standing point. We admit other factors such as political, conflicts, power have influences to the rapid strategic decision making, but we will not put our attention on these aspects. We will focus on the bounded rational perspectives to analyze how managers make rapid strategic decisions.

(2) Although some researchers have already proved that managers are simultaneously rational and intuitive, in this paper we will deepening study how managers make rapid
strategic decisions by using the combination of bounded rationality and intuition under uncertain, complex and time pressured contexts.

<table>
<thead>
<tr>
<th>Logic of consequence:</th>
<th>Logic of appropriateness:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rational and bounded rational paradigm</td>
<td>Politics and power paradigm</td>
</tr>
</tbody>
</table>

**Figure 1 - Concept map of our theoretical standing point**  
*Source: Eisenhardt (1989) and Eisenhardt and Zbaracki (1992) (Revised by the authors)*

### 3.3 Rationality and Bounded Rationality

In this part, we will review the rational paradigm of strategic decision making, and introduce the logic/steps of bounded rationality which we will use as our archetype to develop our model.

#### 3.3.1 Development of Rational Decision Making

When it comes to decision making, perhaps the most common description of decision making by far is the one that portrays action as rational choice (March, 1994). In Economics, the classical “economic man” has been associated with rationality and logicality. Some pure versions of rational choice theory take the view that alternatives
and their respective consequences are ‘given’ or determined by the environment and decision makers have perfect knowledge of those alternatives and their consequences (March and Simon, 1993; March, 1994). Thus, the model of rational choice often serves as the foundation of predicting generality in Economics (March, 1994). For example, a rise in price will lead to a decrease in demand.

In its basic form, the rational decision-making model assumes that actors enter decision-making situations with clear objectives. Decision makers are usually depicted as ‘calm and logical’, who are capable of forecasting the consequences of all the alternatives, gathering the perfect amount of information and comparing all the available options in order to pick up the optimal one. Simon (1965, p.54) identified that decision-making comprises three major phases: “finding occasions for making a decision (identification); finding possible courses of action (development); and choosing among courses of action (selection)”. The three activities take place following a sequence in which opportunity identification precedes courses development, which precedes selection. It is a simplified version of rational decision-making model.

With the gradually and constantly deepening research on human behavior and strategic process, some original underlying assumptions of the rational decision-making model have been challenged. Studies of decision making in the real world have shown that decision makers are not always clear about what they wanted, that not all the alternatives are sought and that not all consequences are considered. Schwartz (2004) argues that knowing what we want, in essence means being able to anticipate how the choices would make us feel. He argues that both our expectations of how we will feel and our memories of how we did feel greatly influence our real perception of our choices, which makes it hard for decision makers to know what they truly wanted. According to March (1994), decision makers do not always consider all the alternatives, they very often only consider a few. Instead of considering all consequences of their alternatives, decision makers usually think about some, while ignore others. When making decisions, decision makers do not always seem to seek relevant information, sometimes information is not relevant and sometimes relevant information is not used.

**BOUNDED RATIONALITY**

As a result of such observations and studies, the heroic nature of the ‘economic man’ has been questioned and proven not a true reflection of reality. Rational decision making theories have gradually incorporated an idea that human rationality is limited/bounded. According to March (1994), the core notion of bounded rationality is that individuals are intendedly rational. Decision makers try to be rational, but they are constrained by limited cognitive capabilities and incomplete information (Cyert
and March, 1992; March, 1994), thus their actions tend to be boundedly rational.

**Cognitive Limitations**

The original debate around the rational model of choice involved its cognitive assumptions (Simon, 1957; Cyert and March, 1992). Simon (1957) argued that a decision maker could hardly be an “economic man” as traditional economic theory postulates, because of the limitations on its knowledge and capabilities. He (1957, p.243) stated that “because of the psychological limits of the organism (particularly with respect to computational and predictive ability), actual human rationality-striving can at best be an extremely crude and simplified approximation to the kind of global rationality that is implied by game-theoretical models”.

This view of cognitive limitations also has some implication in an organizational context. Cyert and March (1992) used empirical studies and models to illustrate that goals can be different and inconsistent among people in an organization, and it is hard for one to perceive a whole picture of the organization. They argued (1992, p.50) that “goals of a business firm are a series of more-or less independent constraints imposed on the organization through a process of bargaining among potential coalition members and elaborated over time in response to short-run pressures”. In addition, they refer organizational rationality as “local rationality”, because the organization breaks major decision problems into sub problems and then assigns these sub problems to subunits. Furthermore, Cyert and March (1992, p.134) found that organizations often use ‘standard operating procedures and rules of thumb’ to guide organizational behavior.

As we discussed earlier, with the deepening study in rational perspective, the original debate, which shaped the paradigm, over whether decision makers are rational or boundedly rational is no longer very controversial (Eisenhardt and Zbaracki, 1992). Rational and boundedly rational are not to be regarded as two contradictory extremes, but rather a balanced dichotomy or continuum.

**3.3.2 The Rational Decision Making Model**

Recently, researchers have attempted to model the strategic decision making process. However, it is a difficult task since strategic decisions are often described as “unstructured” and “messy” (Schwenk, 1995). There are several categories or types of strategic decision processes. As we mentioned before, Simon (1965) identified three major phases in decision making process which consist of identification, development and selection. The three activities take place following a sequence in which opportunity identification precedes courses development, which precedes selection. It is a simplified version of rational decision-making model. Latter, based on Simon’s work, Mintzberg, Raisinghani, and Theoret (1976) made an early
attempt at identifying three major phases with subroutines or sub-phases within each (Schwenk, 1995).

Mintzberg, Raisinghani, and Theoret (1976) argue that two sub-phases are comprised in the step of identification - decision recognition and diagnosis. That is to say, in the first step of identification, knowing the problem and setting strategic goals are main tasks for the top managers. In the second step, Mintzberg, et al. (1976) argue that development could be described in terms of two basic sub-phases, search and design. We believe that after identifying the problem and the future goals, top managers need to collect related information in order to formulate alternatives. Then, selection is logically viewed as the last step in the decision making process (Mintzberg, et al., 1976). That is to say, after screening and evaluating alternatives, top managers should pick up the most effective or profitable choice from these alternatives.

In this thesis, we have chosen the rational strategic decision making model due to the fact that it could represent the most traditional and basic form of rational strategic decision making. Additionally, as we have mentioned before that decision makers are boundedly rational because of cognitive limitations and the influence of contextual factors such as incomplete information. Thus, based on the rational decision making model and the constrained factors: contextual factors and cognitive limitations, we formulated our ideas into the following figure.

<table>
<thead>
<tr>
<th>Under certain contexts</th>
<th>Rational/Analytical steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive limitation</td>
<td>Knowing the problems</td>
</tr>
<tr>
<td></td>
<td>Setting goals</td>
</tr>
<tr>
<td></td>
<td>Collect information</td>
</tr>
<tr>
<td></td>
<td>Find alternatives</td>
</tr>
<tr>
<td></td>
<td>Evaluation</td>
</tr>
<tr>
<td></td>
<td>Selection</td>
</tr>
</tbody>
</table>

**Figure 2 - The Rational Strategic Decision Making Model**  
*Source: Simon (1965) and Mintzberg et al., (1976) (Revised by the authors)*
3.4 INTUITIVE DECISION MAKING

The world we live in assumes that the quality of our decisions is directly linked to the time and efforts we put into making them. So does the management world. One of the basic assumptions of management is that rational analysis makes good choices. Managers believe that they will be better off if gathering as much information as possible and spending as much time as possible before making business decisions. Business schools and textbooks conform to this idea and teach managers various kinds of tools for analyzing situations and for making strategic decisions. For example, before making a decision, such as entering a new market, the manager is supposed to follow a decision process of conducting careful analysis of the target market, forming strategic plans, selecting the best option and then implementing the strategy accordingly. Such a formal analysis method do yield positive outcome when the competing environments managers faced are stable (Khatri & Ng, 2000), when the problems are tightly structured and routine and when facts and figures are available and can be easily drawn upon (Sadler-Smith & Shefy, 2007). However, managers might sometimes be required to make quick decisions with strong time pressure, inadequate information and fast-paced change, under such contexts, the deliberative rational decision-making strategies (e.g. collecting sufficient data, formulating lots of options) are becoming increasingly difficult to be achieved (Sinclair & Ashkanasy, 2005). Thus, many management researchers have turned to the concept of “intuition” as a means of coping with the increasingly demanding decision making environments. (e.g., Sadler-Smith & Shefy, 2004; Burke & Miller, 1999; Hayashi, 2001; Dane & Pratt, 2007).

Managerial studies suggest that intuition plays an important role in organizational decision-making (Agor, 1986; Hayashi, 2001; Isenberg, 1984; Dane & Pratt, 2007). Agor (1986) argues that managers use their intuitions to make decisions that were of strategic magnitude, such as investment in million capital projects. Intuition was most useful when managers faced plausible alternatives and/or inadequate information. Hayashi (2001) states several highly successful managerial decisions which were made intuitively by executives, including the Dodge Viper of Chrysler, and the television show who wants to be a millionaire.

Although intuition has been a topic in managerial studies, there is still some confusion in the management literature about what intuition means. We think that in order to discuss intuitive decision-making in our thesis, we first need to define/clarify what we mean by “intuition”. Hence, in the following section, we will define intuition in the thesis.
3.4.1 Defining Intuition

Intuition has been described in many different ways and fields, such as philosophy and psychology. German philosopher Immanuel Kant referred intuition as the source of all knowledge not based on or capable of being supported by observation (Encyclopedia Britannica, 2009). Kahneman and Tversky (1982, p.124) argued that if a judgment is to be called intuitive, it is reached by an informal and unstructured mode of reasoning, “without the use of analytical methods or deliberative calculation”. Dane and Pratt (2007, p.35) provide a summary of definitions of intuition in different areas such as philosophy, psychology and management (see Table 3.1)

<table>
<thead>
<tr>
<th>Source</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jung(1933:567-568)</td>
<td>That psychological function transmitting perceptions in an unconscious way</td>
</tr>
<tr>
<td>Bruner (1962: 102)</td>
<td>The act of grasping the meaning, significance, or structure of a problem without explicit reliance on the analytic apparatus of one’s craft</td>
</tr>
<tr>
<td>Westcott &amp; Ranzoni (1963: 564)</td>
<td>The process of reaching a conclusion on the basis of little information, normally reached on the basis of significantly more information</td>
</tr>
<tr>
<td>Shirley &amp; Langan-Fox (1996: 564)</td>
<td>A feeling of knowing with certitude on the basis of inadequate information and without conscious awareness of rational thinking</td>
</tr>
<tr>
<td>Shapiro &amp; Spence (1997: 64)</td>
<td>A nonconscious, holistic processing mode in which judgments are made with no awareness of the rules of knowledge used for inference and which can feel right, despite one’s inability to articulate the reason</td>
</tr>
<tr>
<td>Burke &amp; Miller (1999: 92)</td>
<td>A cognitive conclusion based on a decision maker’s previous experiences and emotional inputs</td>
</tr>
<tr>
<td>Lieberman (2000: 111)</td>
<td>The subjective experience of a mostly nonconscious process---fast, alogical, and inaccessible to consciousness---that, depending on the exposure to the domain or problem space, is capable of accurately extracting probabilistic contingencies</td>
</tr>
<tr>
<td>Kahneman (2003: 697)</td>
<td>Thoughts and preferences that come to mind quickly and without much reflection</td>
</tr>
<tr>
<td>Epstein(personal communication, 2004)</td>
<td>The working of the experiential system</td>
</tr>
</tbody>
</table>

**Table 1 - Definitions of Intuition**

*Source: Dane & Pratt (2007: 35) (Revised by the authors)*
From the various definitions, we can see that intuition has long been viewed as a kind of thinking process which is different from rational or analytical thinking and which mainly has an unconscious nature. The distinction between analytical and intuitive thinking process can be explained from a psychological perspective.

More recently, psychologists have taken on a dual information processing view, arguing that people apprehend reality through two distinct kinds of information processing systems. (e.g. Epstein, 1994; Denes-Raj & Epstein, 1994; Wilson, 2002). According to Epstein (1994) and Epstein, et al. (1996), one information processing system, namely the intuitive-experiential system, is assumed to have a longer evolutionary history, mainly operates at the unconscious level in an automatic, holistic, associationistic manner and involves effortless and efficient processing, it allows people to learn from experience and reach conclusions without conscious awareness. The other system, namely analytical-rational system, is considered to be relatively new from an evolutionary perspective (Denes-Raj & Epstein, 1994; Wilson, 2002), operates primarily at the conscious level, is intentional, analytical and it enables individuals to learn information deliberately and to engage in analytical thinking process. This view of rational and experiential processing system is consistent with Wilson’s (2002) notion that apart from the conscious mind, human beings have another unconscious mind that takes information rapidly and effortlessly. He refers this unconscious system as “the adaptive unconscious”.

Drawing on the psychological research of dual information processing systems, both psychological and management researchers have viewed that intuition is in the domain of the intuitive-experiential information processing system (e.g. Epstein, 1994; Sinclair & Ashkanasy 2005; Dane & Pratt, 2007). Sinclair and Ashkanasy (2005, p.356) find out there are three commonalities among different definitions of intuition: 1) intuitive feelings generate beyond conscious awareness, 2) rather than sequential and linear, information is processed holistically, and 3) emotions play a role in intuitive perceptions. Based on these characteristics, they (2005, p.357) thus define intuition as “a non-sequential information processing mode, which comprises both cognitive and affective elements and results in direct knowing without any use of conscious reasoning”. By reviewing the various literature on different subjects such as psychology, philosophy and management, Dane and Pratt (2007, p.40) define intuitions as “affectively charged judgments that arise through rapid, non-conscious, and holistic associations”.

Comparing and summarizing various definitions mentioned above, we define intuition as a rapid non-conscious thinking process which consists of affective elements and in which information is being processed in a holistic manner. Thus, we consider intuition has the following characteristics 1) intuition is an unconscious
process; 2) which involves holistic associations; 3) that quickly lead us to conclusions; and 4) there are affective elements in the process of intuition. To better understand intuition, we will briefly explain these characteristics in the following text.

**Intuition is non-conscious**

The first defining characteristic of intuition is that it operates at an unconscious level. In the above section, we referred to various definitions of intuition indicating that intuition occurs outside of conscious awareness. Psychological and managerial researchers have also argued that intuition is in the domain of the intuitive-experiential information processing system (e.g. Denes-Raj & Epstein, 1994; Dane & Pratt, 2007). Kahneman and Tversky (1982, p.124) argued that intuition is a process “without the use of analytical methods or deliberative calculation.” Shapiro and Spence (1997, p.64) argue that there is “no awareness of the rules of knowledge used for inference” in the intuiting process.

**Intuition involves holistic associations**

The second characteristic of intuition is that it involves a process in which “environmental stimuli are matched with some deeply held (non-conscious) category, pattern, or feature” (Dane & Pratt, 2007, p.37). In the process of intuitive thinking, information is not processed sequentially, but is rather processed in a non-sequential and non-logical manner. Sinclair and Ashkanasy (2005, p.357) argue that intuitive processing “could be likened to a non-conscious scanning of internal and external resources in a non-logical, non-temporal manner in order to identify relevant pieces of information that are fitted into the ‘solution picture’ in a seemingly haphazard way”. When various kind of information randomly assemble a whole picture the solution suddenly comes out. Dane and Pratt cited Raidl and Lubart (2000, p.37) who describe intuition as a process of “linking disparate elements of information”. This linking process of different kinds of information explains why intuition is being referred as associative (Epstein, 1994; Epstein, et al., 1996). Moreover, intuition involves pattern recognition, as Klein (1998, p.31) claims, “intuition depends on the use of experience to recognize key patterns that indicate the dynamics of the situation”, and it does not include logical analysis process, thus it has also been considered as holistic. Since associations in intuition refer to pattern recognition, Dane and Pratt (2007) refer this aspect of intuition as involving holistic associations.

Following from above discussion, the aspect that intuition involves holistic associations corresponds to the concept of experts’ intuition, which we will discuss below. Research has shown that experts have gained sophisticated cognitive abilities through their past experience. Expertise enables them to quickly identify patterns in a given situation (Klein 1998; Prietual & Simon, 1989), as Simon’s (1987, p.63)
assertion that “intuition is simply analyses frozen into habit and into the capacity for rapid response through recognition”.

**Intuition is Quick**
The process of intuition is very fast (Khatri & Ng, 2000). Experts can come up with solutions in seemingly complex situations within seconds, such as in fire grounds (Klein, 1998). From a managerial point of view, Isenberg (1984) argues that by relying on intuition, senior managers can make split second decisions. Dane and Pratt (2007, p.38) state that “the speed characteristic of intuition has long been recognized by management theorists”. For example, March and Simon (1993, p.11) viewed that “the distinctive earmarks of intuition are rapid response (a matter of seconds) and inability of the respondent to report a sequence of steps leading to the results”.

**Intuition is Affect Involved**
Research shows that emotions play a role in intuition and influence the judgments produced by intuitive thinking (Sinclair & Ashkanasy, 2005; Sadler-Smith & Shefy, 2007; Dane & Pratt 2007). Sinclair and Ashkanasy (2005) argue that intuition includes an emotional or affective component. That some authors, for example, Hayashi (2001), and Shapiro and Spence (1997) refer intuition as “gut feeling” or “gut instincts” also reflects that affect is involved in the intuitive thinking process. Agor (1986) describes the feelings when top executives made intuitive decisions as ‘totally exited and harmonious’. Burke and Miller (1999) notice that managers often describe intuition as “affect-initiated decisions”.

Furthermore, Denes-Raj and Epstein (1994, p.713) and Epstein, et al. (1996) connect affect and intuition together through the non-conscious experiential system described above by arguing that the experiential system is “intimately associated with affect”.

In addition, Dane and Pratt (2007, p.39) refer to research in neuroscience that intuition and affection are actively linked through basal ganglia in the human brain. They state that basal ganglia are “engaged through positive affective stimuli and positive emotional experience, and these same neural mechanisms play a central role in engendering the non-conscious associations that spur intuitive judgments”.

**Intuition is Not Instinct**
Intuition is different from instincts (Sadler-Smith & Shefy, 2004; Dane & Pratt, 2007). Sadler-Smith and Shefy (2004, p.81) describe instincts as “the in-built fast biological reactions with which evolution has equipped us in order that we can respond to stimuli in ways that maximize our chances of survival in the face of a
physical threat”. Epstein (2002 cited in Dane and Pratt, 2007, p.40) argues that “biological instincts (e.g. shutting one’s eyes in the sun light) are ‘hardwired’ responses or autonomic reflexes to stimuli”. Thus, intuition is not to be confused with instincts.

3.4.2 DIFFERENT VIEWS ON INTUITION

Having stated the definition and characteristics of intuition, we now turn to the discussion of different views toward intuition. According to Sinclair and Ashkanasy (2005), intuition can be divided into two categories, namely, experience-based and affect-based. In the first category, researchers argue that the main source of intuition is specific-domain experience, and that intuitive judgments are realized through pattern recognition (e.g. Simon, 1987; Klein, 1998). On the other hand, research of the second category emphasizes the importance of affective elements in the process of intuiting (Sinclair & Ashkanasy, 2005). We explore the two categories in the following text.

EXPERTS INTUITION – EXPERIENCED-BASED VIEW

In the previous section, we have mentioned that intuition involves holistic associations, where different kind of information is linked together randomly and when the data match the ‘deeply held patterns’, the solution picture suddenly appears. Following of this discussion, we argued that this kind of pattern recognition is similar to experts solving complex problems. Research indicates that experiences the expert has gained through years of problem solving enable them to recognize patterns or features of seemingly complicated problems rapidly (Simon, 1987; Prietula & Simon, 1989; Klein, 1998; Gladwell, 2005). Simon (1987) noted that chess grandmasters could play against up to fifty opponents, moving from board to board and making each move within few seconds, and they could still win most of the games. Then he argued that a grandmaster’s intuition enables his/her to quickly recognize familiar patterns on the chessboard, and the intuition is acquired through long experience with thousands of chess positions. Simon (1987, p.63) concluded, “intuition is simply analyses frozen into habit and into the capacity for rapid response through recognition”. In a different setting, Klein’s (1998) study of firefighters suggests that experienced firefighters could rapidly size up complex fire situations and make split-second decisions by relying on their years of firefighting experience. Gladwell (2005) argues that in judging the authenticity of a Greek sculpture, named the Korous, sculpture experts’ intuitive judgments could be better than a museum’s 14 months painstaking analysis. He claims that experts’ experiences permit them to make rapid and accurate responses in highly sophisticated situations. Sader-Smith and Shefy (2007) drawing on the neuropsychological literature, argue that intuition grows from an individual’s store of tacit knowledge accumulated through experience.
Experts’ intuition has also been discussed in the management literature. Isenberg (1984) conducted studies on how senior managers think, and he argues that managers rely on intuition to make decisions when facing complex and time-pressured situations. He (1984, p.86) claims that intuition is based on “extensive experience both in analysis and problem solving and in implementation, and to the extent that the lessons of experience are logical and well-founded, then so is the intuition”.

Simon (1987) argued that the underlying mechanism of intuitive skills between managers and chess grandmaster is the same, and is all dependent upon pattern recognition resulted from previous learning and experience. Simon’s (1987, p.61) own explanation is that “the experienced manager, too, has in his or her memory a large amount of knowledge, gained from training and experience and arranged in terms of recognizable chunks and associated information”. Simon (1987) cited the research by Bhaskar where participants, senior managers and graduate students, were asked to analyze a business policy case. It turned out that although the final results produced by both managers and graduates were somewhat similar, it took much shorter time for senior managers to figure out the key features of the case than it took for students. It was because senior managers did much of the thinking unconsciously and let their intuitions involve, but students, being novices, did a lot conscious and explicit analysis.

Isenberg (1984) identified five different ways that managers use their intuition, among which two ways of using intuition are relevant to managers’ experiences. First, intuition enables managers to perform well-learned behavior rapidly. At the beginning, the manager needed to think managerial actions carefully and consciously. Once the manager is skillful at performing tasks, however, he or she can execute many actions without involving much conscious effort. Thus, intuition here means the automatic performance of learned behavior, which is based on years of “painstaking practice and hands-on experience that build skills” (Isenberg, 1984, p.85). Secondly, intuition enables managers to jump over the time-consuming process of in-depth analysis and quickly come up with a solution. In this way, intuition is an unconscious thinking process in which a manager recognizes familiar patterns.

**INTUITION – AFFECT-BASED VIEW**

Research on both psychology and management provides evidence that affection does play a role in the intuitive process. Epstein (1994), for example, argues that the non-conscious (experiential) information processing system, which accounts for many of the characteristics of intuition described above, is closely associated with affection. In order to facilitate understanding, we use the words ‘affection’ and ‘emotion’ interchangeably in the thesis.
A study by a group of neuroscientists Bechara, Damasio, Tranel and Damasio (1997) illustrates this point better. Bechara and his colleagues conducted a card game where participants were asked to select cards from one of the four decks. The cards from decks A and B resulted in large gains or losses, and would lead to a total loss if played constantly. The cards from decks C and D resulted in small gains or losses, and would lead to a total gain if played constantly. Researchers measured participants’ level of skin conductance (a good indicator of people’s emotion) when making their choices and found that normal participants, after encountering several losses, started to generate skin conductance responses to bad cards (decks A and B) and began to select cards from decks C and D without being able to articulate why they did that. That is, they were not consciously aware of the fact that playing cards from decks A and B would lead to a total loss, but they unconsciously felt that choosing from decks A and B was a risky behavior and started to avoid it. This research suggests that sometimes before people are consciously aware of why they made certain choices, their unconscious has already triggered a ‘gut feeling’ toward the options and led them to the decisions that they are going to make (Wilson, 2002). This finding is also consistent with Epstein’s assertion that the non-conscious (experiential) information processing system is closely linked to affect.

To illustrate this point further, researchers in this study also studied patients with ventromedial prefrontal damage (a part of the brain associates with feelings) of their brains and found that prefrontal patients experienced great difficulty of choosing the ‘right cards’ (decks C and D), and even after they knew the trick of the game, because their brains were not able to generate the ‘right feelings’ to guide their behavior. This demonstrates that people’s emotions and feelings play a critical role by helping us screen different possibilities in the environment very rapidly without involving the awareness of our conscious mind.

In a managerial language, several authors have noticed that affection/emotion plays a role in managers’ intuitive decision-makings (e.g. Hayashi, 2001; Burke & Miller, 1999; Shapiro & Spence, 1997). Hayashi (2001) states that managers sometimes experience a ‘gut feeling’ or other physical reactions toward the decisions they were about to make. CEO of the Walt Disney Company Michael Eisner for example, always has some bodily feelings after hearing a good idea. He (cited in Hayashi, 2001, p.62) says, “The sensation is like looking at a great piece of art for the first time”. Similarly, Isenberg (1984) claims that senior managers often use their intuition to sense problems. He gives one example of a chief financial officer who said (cited in Isenberg, 1984, p.85) “I had the sense that they were talking about a future that just was not going to happen, and I turned out to be right”. Moreover, senior managers often use their gut-feelings to check the results of rational analysis. Isenberg (1984,
p.85) states that “executives work on an issue until they find a match between their “gut” (affection/emotion) and their “head” (rationality).

3.4.3 Favorable Intuitive Decision Making Contexts
Managerial research has shown that intuitive decision-making is more suitable in uncertain, complex, time-pressured and constant changing circumstances. (Agor, 1986; Khatri & Ng, 2000; Burke & Miller, 1999; Sadler-Smith & Shefy, 2004; Sinclair & Ashkanasy, 2005; Hayashi, 2001; Isenberg, 1984). Such contexts impose several challenges for managers to follow a traditional rational decision-making manner. In such contexts, as argued by Khatri and Ng (2000, p.64), senior managers’ intuition enables them to size up a situation, “integrate and synthesize large amounts of data, and deal with incomplete information quickly and effectively”. They (2000, p.78) have also found that intuitive decision-making is “strongly positively associated with the financial performance of computer companies” whose competing environments are filled with uncertainty and complexity. In a ‘high-velocity’ environment, for instance, strategic decisions need to be made rapidly, Eisenhardt (1989, p.555) argues that “aided by real-time information and intuition, senior executives can react quickly and accurately to changing stimuli in their firm”.

Agor (1986) has identified several managerial situations in which the use of intuition is most useful: (1) when there is a high level of uncertainty in a firm’s competitive environment; (2) when time for making critical decisions is restricted; (3) when there are several likely alternatives with good supports for each option; (4) when there is little previous decision-making examples to refer; and (5) when “facts” are limited (p. 29).

Similarly, research by Burke and Miller (1999) has also provided empirical evidence indicating circumstances under which senior managers are most likely to employ their intuition. They argue that when facing rapid decision-making situations, senior managers tend to use their intuition. Moreover, when decision-making situations were highly uncertain and complex, such as in restructuring or reorganization, managers are also likely to use their intuition.

3.4.4 Benefits of Employing Intuition in Strategic Decision Making
Although many studies from above discussion have shown that senior managers tend to use their intuitive abilities to make strategic decisions when time is limited, situations are complex and uncertain, few studies, however, have touched upon the topic of the quality of intuitive decisions. We think that one of the reasons being its qualitative nature that makes it hard to conduct quantitative studies.
However, there are still few managerial studies probing into the question of the benefits of using intuition in strategic decision-making (e.g. Agor, 1986; Burke and Miller, 1999). In order to investigate the use of intuition in decision-making, Burke and Miller (1999) conducted in-depth interviews with over 60 senior managers in different kinds of organizations across the U.S. They asked executives to state their perceptions on the quality of intuitive decisions. Two thirds of the respondents reported that intuition had helped them make better decisions. The specific benefits reported in their research (Burke and Miller, 1999, p.95) include: (1) expedited decisions (by reducing the amount of data, managers increased the speed of making decisions); (2) improved quality of ultimate decisions (“provides a check and balance between intuition and rationality”); (3) facilitated personal development (“develops a full set of professional skills”). Research by Behling and Eckel (1991) has also provided some evidence on the benefits of intuitive decisions. They argue that intuition increases the speed of decisions, reduces the amount of data required, however, they have not found any relationship between intuition and decision quality.

<table>
<thead>
<tr>
<th>Benefits of Intuition</th>
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<tr>
<td><strong>Expedites decision making</strong></td>
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<tr>
<td>- leads to quicker decisions</td>
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<tr>
<td>- enables decisions without all the data</td>
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<tr>
<td>- gets the job done</td>
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<td>- helps adapt to flexible changing environment</td>
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<tr>
<td><strong>Improves the decisions in some way</strong></td>
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<tr>
<td>- provides a check and balance</td>
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<td>- allows fairness in dealing with people</td>
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<td>- leads to a higher quality product</td>
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<td>- helps to focus on area needing attention</td>
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<td><strong>Facilitates personal development</strong></td>
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<td>- develops full tool set</td>
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<td>- gives one more power</td>
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<tr>
<td>- provides opportunity to grow</td>
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<td>- improves one’s instincts</td>
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**TABLE 2 - BENEFITS OF INTUITION IN WORKPLACE DECISION MAKING**

*Source: Burke & Miller (1999, p.95) (Revised by the authors)*

**3.4.5 TRAPS AND PITFALLS**

So far, we have discussed what intuition is, different views toward intuition and how helpful it can be in managerial decision making. However, our intuition is far from being perfect, it does not always do the smart and the right thing; it can lead managers into
trouble if they do not pay enough attention to its errors and pitfalls.

Numerous research has shown that the human mind is prone to many kinds of flaws and bias, such as stereotype, prejudice and discrimination, most of the flaws operate at a unconscious level. (Hammond et al, 1998; Sadler-Smith and Shefy, 2004). In the following text, we will present some traps that are likely to influence intuitive decisions.

Firstly, pattern seeking. When it comes to intuition, the human mind has a deep-seated need to seek patterns (Bonabeau, 2003; Hayashi, 2001). It seems that this need is rooted in our intuition—it is a process where the brain gets all the relevant information and fit them into past patterns in order to understand the present and project the future. Bonabeau (2003, p.118) argues that it can get us into trouble, and says that “researchers have shown that our unconscious desire to identify patterns is so strong that we routinely perceive them where they don’t in fact exist”. If managers engage in a pattern-seeking process whenever they come across a new phenomenon, it is likely that they will filter important but ‘unfitted’ information and place the new phenomenon into an old, recognizable pattern in their minds, which is fallacious.

Secondly, over-confidence. Sadler-Smith and Shefy (2004, p.86) argue that the emotional reward from previous successful intuitive decisions might lead to an “unjustified feeling of the infallibility of intuition, which may in turn contribute to the illusion of control and lead to over-confidence in one’s intuitive decision-making abilities”.

Thirdly, the confirming-evidence bias. Various surveys have shown that people naturally seek information that support their assumptions and neglect the information that is contradicable to their assumptions (Hammond, et al., 1998; Hayashi, 2001; Sadler-Smith and Shefy, 2004). Hammond et al. (1998, p.123) explain that there are two fundamental psychological factors to this phenomenon. The first is our tendency to “subconsciously decide what we want to do before we figure out why we want to do it”; and the second is that we very often do things that we like and dismiss things that we do not like.

Last but not least, ease of remember. According to Sadler-Smith and Shefy (2004), we tend to perceive things that are easy to remember as being happened frequently than those that are hard to remember. As to intuition, successful intuitive decisions are usually easily remembered, thus it is likely that executives misjudge the frequency of successful intuitions.
3.5 Strengths and Weaknesses of Analysis and Intuition

In Campbell (1991), Mintzberg challenges the assumption that analysis can produce synthesis by pointing out that relying too much on analysis actually precludes synthesis, because synthesis requires a more holistic view rather than decomposed parts. He then argues that synthesis is rooted in the mysteries of intuition (Mintzberg, 1989). In this section, we will briefly review his view toward the strengths and weaknesses of analysis and intuition.

COST. It first seems that analysis is more costly than intuition, since it takes time to study an event systematically, whereas in a blink of an eye our intuition comes up with an answer. However, this is not that simple. The fact is, according to Mintzberg (1989) that analysis has a high operating cost, but its investment cost is relatively low (to hire some MBA graduates). Intuition, on the other hand, has a very low operating cost. But its investment cost is very high, because a person needs to have a deep experience with an issue before he/she can deal with it effectively through intuition. Prietula and Simon (1989) stated that a chess grandmaster has over 50,000 patterns in his/her memory that enables them to recognize a situation rapidly and storing 50,000 patterns requires more than 10,000 hours training. Gladwell (2008, p.38) in his book, Outliers argues that in any kind of profession, there is a ten-thousand-hour rule – the “excellence at performing a complex task requires a critical minimum level of practice of 10,000 hours”.

ERROR. On the first thought, analysis seems to be systematic and logical, while intuition is chaotic. But Mintzberg (1989, p.70) argues that studies have shown that “although analysis, when correct, tends to be precisely correct, when it errs it can produce strange answers”. While intuition may not be precise every time, it is usually closely felt toward certain kind of issues. He also states, that just as the organization needs to check its intuition with systematic analysis; it also needs to check its analysis with its “commonsense” intuition.

EASE. Analysis works perfectly fine in solving logical problems, such as math questions. However, in some situations analysis can prove to be terribly cumbersome. Gladwell (2005) states that we are all experts at recognizing human faces, but we have trouble describing in words exactly what a face looks like. We do not even need to think about a face, it automatically pops into our mind, because recognizing face is an unconscious, intuitive process; however, when describing a face in words, we force ourselves to verbalize the unconscious thinking process, which is incredibly hard. Mintzberg (1989, p.71) cited Curtis that “the intuitive people tend to act before they think, if they ever think; and the analytic people think before they act, if they ever act”. Thus, the organization has to be aware that in some case, intuitive decisions are more
preferable, while in other case, analysis does a better job. Being forced to choose only one, Mintzberg (1989, p.71) argues, may amount to “either extinction by instinct” or “paralysis by analysis”.

3.6 TOWARD A COMPLEMENTARY VIEW OF RATIONALITY AND INTUITION

Intuitive decision making is often considered as being hard to explain and ambiguous, while rational analysis, on the other hand, is often perceived as being stable, predictable and yields superior outcome (Sadler-Smith & Shefy, 2007). However, a growing body of research suggests that managers are increasingly turning to their ‘gut feelings’ to support problem solving and strategic decision making, specially under complex or uncertain circumstances (Burke & Miller, 1999; Sinclair & Ashkanasy, 2005; Sadler-Smith & Shefy, 2007). Sadler-Smith and Shefy (2004, 2007) argue that intuition and rationality are complementary views, thus executives should be able to use both of them in different decision-making contexts. Considering only one aspect, either it being intuition or rationality, gives managers a partial view of decision-making situations. Pondy (1983, cited in Sadler-Smith & Shefy, 2007, p.190) contended that “to be exclusively rational is to mediate all one’s perceptions and actions through a previously articulated frame of reference; to be exclusively intuitive is to relate to the world without the mediation of such a frame”. Simon (1987) argued that intuitive thinking is not an independent process operating without analysis; rather, deliberative and intuitive thinking are complement to each other and both are critical to making effective decisions. Simon’s (1987, p.63) observation on experts’ intuitive skills that “intuitions are simply analyses frozen into habit and into the capacity for rapid response through recognition” concurs with the view that intuition is complementary to analytical thinking, and that managers need to hone both analytical and intuitive skills in order to address strategic problems effectively. Prietula and Simon (1989) argued that either in experiment or in reality, experts’ analytical and intuitive thinking combine to make sound decisions.

Epstein (1994) and Epstein et al. (1996) argue that people process information through two parallel and interactive systems: the rational and the experiential systems. The rational system, which involves rational analysis and deliberate thinking, operates at a conscious level. The experiential system (which we consider relates to intuitive thinking) primarily operates at the unconscious level, which is assumed to be automatic, intuitive, holistic, unconscious and is “intimately associated with affect” (Epstein et al., 1996). The two systems operate in parallel and interact with one another, and the proper cooperation of the two systems helps people function well when making decisions.

Burke and Miller (1999) in their empirical research have found that more than 90%
of the managers they studied claimed that they had combined intuition with rational analysis in making strategic decisions. Sadler-Smith and Shefy (2004) argue that combining both rational analysis and intuition in decision-makings allows these two modes to reinforce each other until an optimal judgment can be made that conforms with both ‘facts’ and ‘feelings’. Managerial studies (e.g. Agor, 1986; Sadler-Smith & Shefy, 2004) of the use of intuitive thinking among senior managers have suggested that the relationship between intuition and rationality may work mainly in two ways. First, moving from intuition to rational analysis indicates a process in which managers first use their intuitions as an explorer, and then they could use analytical data to back up their intuitions; Second, proceeding from rational analysis to intuition implies a process in which managers employ intuition as a synthesizer or integrator, they first make decisions through rational analysis, and then they might use their expertise-based intuition to check with the rational results (Agor, 1986).

**Figure 3 - Toward Complementary View of Rational Analysis and Intuition**

3.6.1 Intuition Within the Phases of the Rational Decision Making Model

We have discussed the complementary relationship between rational and intuitive thinking, they not only cooperate in the level of two information processing systems, but also intuition could cooperate within the phases of rational decision making. Isenberg (1984, p.86) argued that “executives use intuition during all phases of the problem-solving process: problem finding, problem defining, generating and choosing a solution, and implementing the solution”. These phases that Isenberg describes as within the problem-solving process are also captured in the rational decision making process. Thus, applying Isenberg (1984)’s opinion, we argue that intuition can be included in the phases of rational decision making. In the previous section (Ch 3.2.2), we framed our rational strategic decision making model based on Simon (1965) and Mintzberg, et al. (1976)’s research in which we discussed three
basic phases in the rational decision-making process. We believe that intuition exists within the sub-phases, (i.e. identification, development and selection) of the rational strategic decision making model. The figure below (Figure 3.4) shows the complementary relationship between rationality and intuition, in which intuition cooperates with the rational way of making decisions. However, there is a lack of literature discussing the role of intuition within these phases which we will further test in our empirical research.

**Figure 4 - The interplay of the rational and intuitive decision making model**

*Source: Simon (1965) and Mintzberg et al, (1976) (Revised by the authors)*
CHAPTER 4 EMPIRICAL FINDINGS

The purpose of this chapter is to present the empirical data that we have collected through interviews during our study. Before presenting the findings from each company, we will present a brief introduction of that company. This chapter is concluded with a summary.

4. EMPIRICAL FINDINGS

4.1 SYNTRONIC AB

Syntronic AB is a leading Swedish engineering design company dedicating to the design and development of electronic, electro-mechanics, technical hardware and administrative software. Syntronic was established in 1983 in Stockholm by two graduates from Royal Institute of Technology. Its headquarters has been moved to Gävle since 1985. Today Syntronic is an international company, it has offices in several Swedish cities, including Stockholm, Lund, Gothenburg, and R&D centers in Kuala Lumpur in Malaysia and Beijing in China (Syntronic AB Homepage).

Syntronic offers technological solutions where they take responsibility in product development and systems integration. Their customers range from multinational companies that engage in extensive technological development to small and medium sized local companies, in sectors such as telecommunication, automotive, defense and medicine industries. Along years of development, they have gained a great deal of experience and technological competence, which enable them to fulfill customers’ needs. Quality, competence and ease of production are their goals when it comes to satisfying customers’ needs.

4.1.1 DECISION-MAKING PROCESS & TOOL IN SYNTRONIC

Strategic decisions in Syntronic were made by its board based on operational information and data from the previous year, according to our interviewee Mr. Jansson, and he is a member of the board.

“When we have business decision, or product development decision, mostly we wait, and don’t make the decision until we have so many facts as possible and we know as much as possible about the market about the customer about anything, as late as
possible we make the decision, we do it most of the time”

Syntronic’s strategic planning process is divided into several parts, including evaluation/tuning, decision making/goal changing, communication and implementation and follow-up. These steps take place at different times. The strategic making process always begins in May, which is when the board starts to evaluate previous year’s performance, and they will be constantly receiving operational information from offices around the world until the end of August. During this process, the board summarizes the performance of the company and formulates new strategic goals for the next year. Somewhere in the end of July, the board begins to formulate strategic decisions, and then they will communicate new strategies to the whole company in the world. New strategies will be implemented and their performance will be evaluated continuously throughout the year (see Figure 4.1 & 4.2). Usually, goals are very clear during this process, such as gaining profit and growing by 30% every year.

**Figure 5 - Managerial Process of Syntronic Part 1**

*Source: Our interviewee Mr. Jansson (Revised by the authors)*
That is the overall strategic process, but its business and product development strategy process is slightly different. Since customers are involved in this process, it thus includes customer relation and they need to constantly talk to customers and take their needs into consideration.

**4.1.2 RAPID STRATEGIC DECISION MAKING**

When the decision-making context is complex or time is limited, as right now during the financial crisis, Mr. Jansson said they have made lots of decisions under time pressure, which are hard to measure. Sometimes they would not be able to follow the logical steps.

When making rapid strategic decisions such as investments in technologies, or building a prototype production line. Although they do not have the time to strictly follow the analytical phases, they rely on what they call the ‘Five Ks’ principle. Five Ks stand for Kompetens (Competence), Kunskap (Knowledge), Kapacitet (Capacity), Kontinuitet (Continuity), and Kund (Customer).

“We have 5Ks in Swedish, we have competence and everything we do should come from this, one of them is Knowledge. When we do business decisions, we want to give our customers more knowledge, we deliver knowledge (core competence) and we always do what we have promised to do, (meaning) that we have the capacity to do it, and that everything we do is just not this time, we do it everytime, so continuity, and we always have the customer in the center. When we make decision very fast, we always fall back to these five main strategies, if it’s within them then that’s ok, then
we can make a fast decision.”

4.1.3 INTUITIVE DECISION MAKING

During the interview, we asked Mr. Jansson if he had ever experienced the intuitive feeling that he felt it was a right decision but he could not explain why, he gave an indirect yet positive answer.

“Not so directly, as you say, I have thought about it, but experience give you that, I know sometimes that situation will come out that way, because it has done that before, in such case”

Mr. Jansson’s general opinion on intuitive decision making is that it is good to mix analytical and intuitive thinking when making strategic decisions. If he had not sometimes followed his intuition, Syntronic would not have gained advantages over the market. The problem with information and analysis is, according to him, that every company can get exactly the same information and conduct the same analysis, if everyone came up with more or less the same results, then no one would get an advantage. To be successful in the market, sometimes you have to go with your ‘stomach feeling’.

“In some way, I think it's good to have a mix of analytical way together with the feeling, I think so. Everybody, every company and every one out there can get exactly the same information about anything, and if you do the work almost the same way and you have almost the same material for the decisions, and if you do it analytically or out of model, you have almost the same decisions. And if all companies come out with almost the same decisions, we don’t have any competition (Competitive advantage). Then you have to do it with some kind of feeling, some kind of stomach feeling to make it look better. I think so, it is in there of course it is”

Mr. Jansson mentioned an example of intuitive decision making. Before establishing an R&D center in Beijing, the board conducted an analysis, which did not suggest quite favorable results, but they felt that it was the right timing and the company decided to move to Beijing, it turned out that they made a good decision.

When asked why he was sure about that decision, he explained that before moving to Beijing, they had already been operating in Kuala Lumpur for two years, and he felt that it was just natural for them to move to Beijing next step.

“A lot of companies did the same analysis as we did, I think, at that time. But we were the first R&D company to go to China, for instance, we were the first company that is owned 100% by Syntronic in Sweden..... It was the feeling that the time was
right, I think that was the difference between Syntronic and other companies, because they didn’t go there, we first out there. It was as I said before, both words, hunch and the analysis.”

Besides talking about intuitive decision making in general, Mr. Jansson also talked about the role of intuition in the steps of rational strategic decision making, i.e., identification, development and selection.

**IDENTIFICATION**

Identification in our theoretical model involves problem identification and prioritization. With respect to problem identification, according to Mr. Jansson, they (the board) diagnose strategic problems mainly by using analytical tools, such as the Syntronic management model (Figure 4.1 & 4.2), SWOT analysis. Diagnosing problem follows a typical analytical procedure in which they collect and analyze data. Thus the manager considered analysis as the major tool for identifying problems, yet he mentioned that interpretation of data somehow came from his experience, but he was not sure if it had anything to do with intuition.

However, intuition involves in the process of prioritizing problems. Usually, there will be several strategic problems found in the diagnostic process. But only few of them could be solved, because solving them requires enormous amount of resources in terms of money and time. So how to choose and rank the goals becomes an issue, which calls for managers’ intuition. When it comes to that, Mr. Jansson said,

“When we make a decision, which one of them is most important of course [involves] a lot of intuition [and] of course we cannot say that’s more important than that, [because] you can see the impact from this one”

**DEVELOPMENT**

Development in our theoretical model includes collecting information and formulating alternatives. When time is abundant, rationality plays a dominant role in the process of alternatives formulation. Whenever they develop new products, or new business proposals for customers, they always wait as late as possible, so that they could gather enough amount of information to make a sound decision. However, when time is limited, according to Mr. Jansson, it is impossible to collect so much information and then to formulate options. It is more important to quickly collect few information and formulate a course of action.

When it comes to formulating alternatives, they (the board) usually work with scenarios to predict if the way they are working is going to work in the future, which, according to Mr. Jansson, is not only based on facts, but also on a kind of feelings.
Empirical Findings

“Sometimes we do have the time to collect as much information as possible, and I think that’s very important to always do that. And when we make a choice and we always do this as late as possible, then we have the chance to get more and more information so we can make better choices. We often work with scenarios, if we do that, what would the scenario looks like, and working with scenarios of course [involves] a lot of experience and intuition because you can never know what will happen if you make that decision, that’s just feeling.”

Selection
The selection phase in our model includes evaluating and making the final decision. In this phase, the main tool they use is risk analysis. Mr. Jansson also mentioned that when the environment was changing very fast, intuition could help him quickly make the final choice. It is important for his company to make quick adjustments if a decision was wrong, because they are a small company.

“If someone see it’s wrong they would say, Bjorn, this is totally wrong, don’t you see if we do that, that’ll crash over there. Alright, ok what shall we do to make it better? If you do this way, Bjorn, it’s alright. Then ok, now the intuition comes, yes it is right, I’ll change. We are a small company, the way for us doing the match out there, competing with very big companies, is be fast and smart, so we have to change a bad decision if it’s a bad decision.”

He also stated that, in a time-pressured context, it is always better to make a rapid decision, even if it is very fast, than not making any decision. Because once you have made a decision, everyone knows what you think, and it is easier to get feedback in case the decision is wrong.

4.1.4 Benefits of using intuition
Mr. Jansson referred to a decision of establishing a prototype production line in Sweden, which analysis suggested negative results mainly due to high production costs in Sweden; however, he felt that the customer might want to go to see their products being produced in the factory, so they had chosen to build the production factory in Sweden. This eventually contributed to an increase customer satisfaction. He also claimed that intuition could be very helpful under time pressure since it could facilitate the speed of decision-making.

“Two years ago, we started up a small prototype production line [in Sweden], if you analyzed it, you’re an idiot if you started up something, it should be in East Europe or in Asia somewhere where the cost is lower. But we had the feeling some of the customers want to come up just look at, oh here’s my product just coming out there,
and it's small volume, so we discussed that in the board and we invested in a small production line and it has come out quite well”

4.2 ÖSTGÖTA CORRESPONDENTEN (CORREN)

Östgöta Correspondenten AB, founded in 1838, is the leading newspaper company in Östergötland county, Sweden. During the 1990s, the company expanded in the areas of web publishing, radio, direct marketing and printing. The company had been owned by the same family until 2008 when it was sold to Norrköpings Tidningar AB. Today the company publishes the newspaper Östgöta Correspondenten 6 days a week with a circulation of about 60,000 copies every day, it also owns its website Corren.se and a TV channel named 24Corren2.

4.2.1 STRATEGIC DECISION MAKING IN CORREN

According to Mr. Andell, former CEO of Corren, Strategic decisions were usually made in board meetings, which took place four or five times a year. Generally, the strategic planning process started with taking information from the market, and then they analyzed the data, and made predictions of the market. The market in 1990s was not stable for Corren because it was kept changing, so Mr. Andell said that it was always that the market forced them to think and to change. However, it was not always the case that they followed the market, sometimes they needed to make decisions even before the market had changed, so that they could be prepared and accumulated some advantage over competitors. In this process, Mr. Andell said that he always let his intuitive feelings involve in predicting the market situation, and he gave us an example of launching the website of corren.se. In 1995, during his visit to his son who was working at the Swedish embassy in USA as a technical advisor, Mr. Andell the first time had a contact with the Internet, and he felt that the Internet would make a big change and then he found out a way to make it work at Corren.

4.2.2 INTUITION WITHIN THE PHASES OF RATIONAL STRATEGIC DECISION MAKING

Regarding the analytical steps in our theoretical model, although Mr. Andell agreed these phases in making strategic decisions, but in reality, they did not follow the ‘identification-development-selection’ process so strictly. Because it was a messy world and information came from many different resources, and things were changing very fast, so the most important thing was that one actually made the decision, because there was no way that you could see clearly through the mess.

“The process [identification-development-selection] comes in a mess, it doesn’t

2 The information was provided by our interviewee, Jan Andell, former CEO of Östgöta Correspondenten AB.
come in that way, it comes all in a mess, then you have to think what is what, what in your book you must take in steps. The model is alright, in some way you did in that way, but not so structure, because you get information from different parts, on the old business you meet people in the market, and you get from [information from] the outside world, ideas, and then you can put them together and make it for your local market. So the structure is alright, but you don’t follow it so exactly you do everything in the same time, and then you can come to the point where you have to make the decision. ..... someday I must make a decision, and when [I] have to make decisions tomorrow, then something else will be more important, so it not easier because you have too much information, everything goes so quickly”

When decision situations were complex, and under time pressure, Mr. Andell said that they always made short-term strategic decisions, and they were prepared to change when situations changed. Intuitive feeling, according to him, certainly could be an additional way to analysis under such circumstances. It was impossible to make strategic decisions simply by looking at figures plus there was always not enough time for him to do analysis, sometime you just felt that was right, and then you did it.

“they make one decision today, and they say this is right today, but if it’s [the situation] changed too much tomorrow, we will change the decision, so the strategic decisions is not forever, it’s short time value, because they must change, [and] you must be prepared to change if the situation changed. The feelings are important, at least for me, yes I wanted to do this, then we did it, but you also must see the figures, you must use both feelings and figures”

IDENTIFICATION
When the strategic planning process in Corren started, the board usually collected data from different sources, such as the market, from observing other companies’ strategic moves. Then they analyzed the data and reached their conclusions. Mr. Andell provided us an example.

“One of the biggest decisions we made was to build a new printing plant, I had been in the decision making for that plant, it was a very big decision for the company, because we still had the old machine, and lots of people working in that old way, then we had to decide if it was possible to have a new machine... we looked at the market, looked what the other companies had done, and got information from different places, and then we said ok then we did a new machine, ”

DEVELOPMENT
In Corren, CEO’s job was to provide strategic goals, Mr. Andell worked on a more
general picture, and he did not formulate detailed plans or alternatives to achieve these goals. What he did was first to sell these goals to the employees, once the employees accepted these goals, Mr. Andell would provide resources for them to work toward the goals. Thus, he developed his courses of action by conveying goals to people and providing resources. In this process, he used his intuitive feelings to find people who were capable of doing that job and to locate resources to different goals, because sometimes it was hard to locate resources to goals which were of no big difference.

**Selection**

When choosing among different options, according to Mr. Andell, they usually picked up the option that was safest to generate profits. In choosing this option, they used both formal analysis and intuitions, because sometimes it was hard to distinguish different options.

“[when choosing options] strategically you will choose the way you think you earn the most money on, what the safest way is to earn more money? you can see the figures can read can think about what you think are the best figures. But of course the feeling comes in if you want to do that, that’s your idea, that will be, you feel right, but one problems is that you shouldn’t have too many such ideas, you need so much money, it’s possible to do everything in the right way, not enough with money to do everything. If you start too many projects, then nothing will be good, so you must understand that to do not do more than you can put enough money in it, but I must say it’s a lot of feelings, you have to guess you don’t know”

**4.3 BT Product AB in Toyota Motor Corporation (BT)**

Based on the vice president Mr. Persson’s introduction and the information from Toyota’s websites, we summarize the background and organizational structure of BT, which is part of Toyota global systems.

As early as 1946 BT was founded and it was established in Mjölbry in 1952. It is operating within the material handling equipment sector which provides trucks for internal material handling and related services. BT is a part of Toyota Material Handling Group (TMHG) which is part of Toyota Industries Corporation (TICO). There are four geographical business areas under TIHG: respectively Toyota Material Handling Europe (TMHE) with offices in Brussels, Mjölbry and Linköping. Their products are sold under the brand names BT, Toyota and Cesab. Toyota Material Handling North America (TMHNA), Toyota Material Handling Japan (TMHJ) and Toyota Material Handling International (TMHI). (See Figure 4.3)
4.3.1 Organizational Context

The strategic decision making of Corren and Syntronic are directly organized by the top management we interviewed. Different from these two companies, as a part of complex Toyota global system, the strategic decision making process in BT have been largely influenced, controlled and cooperated within the systems. As Mr. Persson said:

“Strategic decision could be taken on different levels with different partners also in organization depending on which type of issue. This structure that we have makes it more complex to have strategic decision. But of course it is good or strong potential in the big organization, we have a lot of possibilities to use synergies in product development or in purchase in other areas, distributions of products and so on. But it makes it more complex in such a big organization. So we are sometimes depending on others, so we are not free to make our own decision.”

4.3.2 Strategic Decision Making Process in BT

Mr. Persson used a case to explain the process of how they finally committed a strategic decision which could also reflect how the complex system influenced the strategic decision making in BT.

Some years ago they planned to change BT’s CAD systems in product development.
“We have evaluated the different types of systems available and we said that could be the best for us. But the decision had to be improved here and then for the total company we should have the same CAD system, so it is easy to cooperate between us. So the decision was not the one that we have proposed but the others suppliers were chosen due to that will help us to change in the future working together. But it is not the best decisions for my division, maybe for the company. So sometimes we have to consider the global situation, and that could be a benefit also for us for the future but make it more complex.”

Besides influence from the complex system, if look at the process of strategic decision making itself in BT, they still use a kind of analytical method to formulate their business plan. Based on the SWOT analysis of the strength, weakness and so on, they basically follow the phases of defining the problem, collect information, evaluation etc.

4.3.3 INTUITION INVOLVED

Analytical perspective is just one part of the methods to formulate the strategic decisions, intuitive thinking could be involved in this process. Mr. Persson said that:

“I think that all the time some parts that intuition is involved. It’s very hard to know what makes me choosing this or that alternatives. What are the things that have influence me, intuition is just the name that something has influenced me to when taking my decision.”

“In the decision making, you have a feeling that would be a good decision, but what makes me having that feeling. I don’t know, something has influenced me, something else than the facts that has presented has influenced me to think this is a better option/alternatives, but if it is some experience I have had, I don’t know, it’s very hard to say what gives that influence.”

“Sometimes I can’t explain why I feel this decision is better than the other one. But I think that feeling, principles and also of course the facts which has presented makes up the decision. And I think they are always there, those intuitions”

For Mr. Persson, intuition could be seen as an additional method but also sometimes weakness, in all it is an additional part of decision making at least.

4.3.4 INTUITION WITHIN THE PHASES OF RATIONAL STRATEGIC DECISION MAKING

Identification

Identification in this paper consists of knowing the problems and prioritizing them,
in this process, generally BT used SWOT analysis as the analytical method to formulate the business plan. Mr. Persson said that:

“the SWOT analysis was based not only on facts, also depending on what you think, also you try to make it based on facts but maybe sometimes you could make your action plan at first. But you do the SWOT analysis and then the come out and become your action plan based on that. And of course you don’t have all the facts when you try to compare your strength, compare to competitors and so on. So it’s based on your feelings of what you think your strength and weakness are. So yes of course I use intuition when both doing this SWOT analysis and when from that making the action plan”

Intuition is involved in BT’s problem ranking process.

“I think intuition is a part of a ranking process, or the part of evaluation of your situation you doing the SWOT analysis. Intuition is part of that process, it is not based on 100 million facts or you don’t have the facts on situation of your competitors and what happened in the market, or will be any development of the fuel sales in the future that will influence the development of warehouse trucks. There are a lot of unknown facts, you have to base your decision on some kind of feeling or intuition”

DEVELOPMENT

In the development step, it consists of collecting information and formulating alternatives. When it comes to collecting information Mr. Persson mentioned that he always had hunches towards particular information, but it was not that he intended to do so, it was rather an involuntary and automatic process.

“No deliberately. I think I am like that. Somewhere back in my head I had a preset, and I think this would be the answer to this question, and then I am looking for that type of information. So I have some kind of preset or some kind of opinion in one direction, it is easier to get confirmed, to have that opinions confirmed when looking in to the fact or trying to collect the facts. But of course you try to be as objective as possible. But I think that is difficult. I think you are always influenced by your intuition”

And also when under the context of time pressure, intuition plays an important role in the development step.

“When the time is limited, you cannot have the time to collect information as much as possible. So when the time is limited, then you have to trust your intuition. This is quite often the case. You haven’t got enough time to collect all the facts and you know that we would like to collect the information that that and that, then intuition and my
feeling is that we should do like this.”

**Selection**
The step of selection refers to evaluating the alternatives and selecting. In this process, Mr. Persson mentioned that although they tried to use as much objective and overall eyesight as possible, especially considering such a complex global system, intuition is still involved in this step.

Mr. Persson said: “we try to evaluate the facts as much as possible and listen to people with the different type of experiences. But it is very much depending on which type of decisions or issues we are talking about. But also of course intuition is involved in that evaluation process”

**4.3.5 Benefits of Using Intuition**
Mr. Persson said that it is hard to say that intuition could improve the quality of strategic decision making; we cannot say it is good or bad things, but at least intuition could improve the speed of strategic decision making.

“Well, I cannot say it helps me if improve the quality. I think it improves the speed. So if you allow yourself to take the decision based on intuition, it goes faster, but I am not sure it will be the better quality, maybe not, but sometimes also speed is important if you have to investigate, investigate, and investigate take too long time. ”

**4.4 Summary of Empirical Findings**
The summary of the interviews with Corren, Syntronic and BT is presented in this part.

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<th>Syntronic</th>
<th>Corren</th>
<th>BT</th>
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<td>International company</td>
<td>Local company</td>
<td>Company within a global corporation</td>
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<td><strong>Strategic decision making process</strong></td>
<td>Strategy formulation</td>
<td>Planning process</td>
<td>Business planning process</td>
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<tr>
<td><strong>Analytical method</strong></td>
<td>Syntronic Managerial Process model &amp; SWOT</td>
<td>Market research data and figures</td>
<td>SWOT</td>
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<td><strong>Intuition involved in strategic decision making process</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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EMPIRICAL FINDINGS

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<th>Identification</th>
<th>Development</th>
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<td>More analytical tools but intuition also involved</td>
<td>Quick course of action</td>
<td>Both analytical and intuitive</td>
<td>Increased decision making speed</td>
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<tr>
<td>More an analytical process</td>
<td>Intuition plays an important role</td>
<td>Both analytical and intuitive</td>
<td>Increased decision making speed</td>
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<td>More analytical tools but intuition also involved</td>
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<td>More rational, intuition may be involved</td>
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**Table 3 - Summary of the Empirical Findings**

**4.4.1 Background of the Three Companies**

Strategic decision making processes existed within all Corren, Syntronic and BT, although they are operating in different industries with different organizational contexts and sizes. However, the specific processes of strategic decision making within these three companies are different. On one side, Corren operates as a local company, it is operating in a less complex system compare to international or global companies. Top management in Corren just considered their own situations and contexts to make the strategic decisions. Comparatively, another side as BT, most of the strategic decisions should be made in cooperation with the complex system in the global company. In such a big and complex system, sometimes organizational politics plays an important role in strategic decision making process, and this point was also proved by Mr. Persson, the vice president of BT. The third company, Syntronic as an international company, operates in the middle of the two sides. The strategic decisions in Syntronic concern several sub-divisions in the world but the whole system is less complex than global companies. Besides different organizational backgrounds, we have also found that some decision-making contexts such as uncertainty, complexity and time pressure are common in all the three companies.

**4.4.2 Strategic Decision Making Processes**

Strategic decision making processes exist within all these three companies, but they are defined with different names: the main process of strategic decision making in Corren is referred as the “planning process”, such as formulate new strategic, substantial change etc. In Syntronic, “strategy formulation process” is the main strategic decision making process and they have a managerial model to generate strategic decisions. Similarly, BT has its own process named “business planning
process”.

Although the strategic decision making process has been named differently in the companies, from the interviews we found that all these strategic decision processes followed an analytical structure. In Corren, Mr. Andell did not mention the specific analytical tools they used in making strategic decisions, but he emphasized that those decisions were mainly based on facts and figures. Comparing to Corren, both Syntronic and BT mentioned that SWOT analysis is the main rational and analytical tool they used in strategic decision making. Furthermore, Synronic used their own strategic decision making model named “Managerial Process model” which is a formal and analytical structure to make strategic decisions.

However, when they were asked about how they made strategic decisions under uncertain, complex and time-pressured contexts, all of these three managers mentioned that they would not necessarily use rational/analytical methods, instead, they let intuition involve in the analytical decision making process.

4.4.3 Intuition within the rational strategic decision making model
Although different companies name their strategic decision making process differently, they all followed an ‘identification-development-selection’ process. From the three interviews, we found that intuition was involved in each phase of the strategic decision making process, especially under complex and time-pressured circumstances.

4.4.4 Benefits of using intuition
Managers from Syntronic and BT stated that the speed of strategic decision making could be increased by using intuitive method. Also, top manager from Syntronic provided a case which showed that they increased the customer satisfaction by using intuition. But it is hard to say whether intuition is a strength or a weakness, they could not control the consequences brought by using intuition.

4.4.5 Bias in intuitive decision making
During these three interviews, we found that it is quite hard to ask our interviewees if they were over-confident when using intuitive decision making, and also it was hard for them to recall any painful lessons made by following their own biases. However, we still find some evidence which could prove that biases exist in the intuitive decision making. For example, Mr. Persson from BT mentioned that in the phase of collecting information, he always had some kind of preset or opinions in one direction which made him easier to get confirmed of some information when looking into the fact and trying to collect the facts. In this process, he tried to be as objective as possible, but it was quite difficult to achieve. The certain kind of
information or facts he used was always influenced by his preconceptions. Thus, the preconceptions or pre-opinions may increase the speed of collecting information, but may lead to the problem such as ignoring other disconfirming evidence. The bias could also be found in the interview with the former CEO of Corren. Mr. Andell talked about his opinion on market research. Based on the local market, when the market research was not in their way, they would say it was the market research that was wrong, and what they wanted was the right one.
CHAPTER 5 ANALYSIS

In this chapter, we will analyze the empirical data by using the frame of reference in order to answer our research questions. The analysis is structured according to the three research questions.

5. ANALYSIS

5.1 COULD INTUITION BE AN ADDITIONAL WAY TO MANAGERS WHEN MAKING STRATEGIC DECISIONS UNDER COMPLEX AND TIME-PRESSURED SITUATIONS?

Before moving to analysis, we would first like to put the use of intuition into context. We would mainly discuss the use of intuition in strategic decision makings under complex, uncertain and time limited/pressured circumstances. Fredrickson (1984; 1985) argues that the more complex or turbulent business environment is the less rationality managers tend to use when making decisions. Grant (2003) studies the strategic planning process and the empirical evidence shows that there is limited innovation and analytical sophistication under a complex environment. During the empirical study, we found that all interviewed executives from Corren, Syntronic and BT admitted that complexity and uncertainty are common in their businesses and it is very difficult to make strategic decisions under these circumstances by solely relying on the rational and deliberate way.

5.1.1 COULD INTUITION BE AN ADDITIONAL METHOD?
Through our interviews with the three executives, we have found that all of them have used their intuitive abilities when engaging in major decisions of their companies, such as new product development (in Syntronic), building a new printing plant (in Corren), and choosing new suppliers (in BT-Industries).

In our frame of reference, we stated that in complex and uncertain situations, managers are particularly likely to employ their intuition to make strategic decisions (see chapter 3.4.3). In our interviews, the three executives have confirmed this point. For example, in the interview with the CEO of Syntronic, Mr. Jansson referred to an important decision of the establishment of the R&D center in Beijing. He mentioned
that it was a decision under complex situations in the sense that it involved lots of funds, they were not familiar with the situation of China, and analysis did not suggest positive results in terms of costs and benefits, but he and other board members felt that the time was good and it was worth trying, so they finally chose to build the center in Beijing and it turned out to be a good decision.

Time limit is another factor that contributes to the use of intuition in our frame of reference. Sadler-Smith and Shefy (2004) contend that when decisions have to be made rapidly, executives may have no choice but to rely on their intuitive judgment. All three executives seem to agree on this point. For instance, Mr. Persson from BT-Industries told us that when he did not have enough time to collect facts and make decisions, he tended to trust his intuition. Mr. Jansson from Syntronic stated that when the time for decision making was limited, it was impossible to strictly follow the rational decision making phases, they (the board) tended to make intuitive decisions. However, he also mentioned that intuitive decisions must accord with what he referred as the ‘Five Ks’ overall strategic framework, which means Kompetens (Competence), Kunskap (Knowledge), Kapacitet (Capacity), Kontinuitet (Continuity), and Kund (Customer).

Agor (1986) argues that when “facts” are limited, managers’ intuition is useful in making strategic decisions. One example could be that Mr. Andell, former CEO of Corren, mentioned that before launching the news website corren.se in the middle of 1990s, there was little evidence of usability of a website for a newspaper. He just felt that it would be a good thing for the company, and as it turned out the Internet has become increasingly important to the company since the late 1990s.

To sum up, from the discussion above, we have found that under complex, uncertain and time-pressured situations all our interviewed managers would at least partly rely on intuition to make strategic decisions. We have also found when “facts” (e.g. information available for making decisions) are limited, not all, but one of the interviewed managers has reported using intuition in decision-makings.

### 5.2 Relationship between Rationality and Intuition

In the frame of reference, we looked at the relationship of rationality and intuition from both a psychological and a managerial point of view. From a psychological point of view, we refer to Epstein’s (1994, p.711) argument that there are two different types of information processing, “analytical-rational and intuitive-experiential” and that people process information through two different, parallel and interactive systems: a non-conscious experiential system and a conscious rational system (Epstein, et al., 1996, p.391). The non-conscious
experiential system (in which we consider intuition to be) is an efficient system for processing information automatically, rapidly, effortlessly and it is “intimately associate with affect, including ‘vibes’ or other subtle feelings (e.g. ‘gut feeling’) of which people are often unaware” (Epstein, 1994, p.713). The conscious rational system is assumed to be deliberative, analytical, abstract and relatively affect free. The two systems operate in parallel yet interact with each other, and the proper cooperation of the two systems helps people function well when making decisions (see chapter 3.4.2). As Epstein, et al. (1996, p.391) argue, the two systems normally “engage in seamless, integrated interaction, but they sometimes conflict, experienced as a struggle between feelings and thoughts”. This complementary view of intuition and analysis from psychological research serves as a foundation of our thesis’s empirical part, thus we thought it is worth mentioning here.

From a managerial perspective, several managerial scholars argue that analytical and intuitive thinking are complement to each other and both are critical in strategic decision making, thus it is important for managers to combine both analysis and intuition in managerial decision making (e.g. Burke & Miller, 1999). Our empirical data support this view. All the three executives confirmed that they have used both analysis and intuition when forming their company’s strategic decisions. For example, Mr. Andell from Corren mentioned that when encountering decision-making scenarios, he used his intuition as well as ‘facts and figures’ to comprehend a decision more fully. Mr. Jansson from Syntronic, said that when it was required to make fast decisions, they (the board) relied on their intuition, but they also used the ‘Five Ks’ (Kompetens/Competence, Kunskap/Knowledge, Kapacitet/Capacity, Kontinuitet/Continuity, and Kund/Customer) standard to check if the intuitive decision fits into the overall strategic framework. He also mentioned that it is necessary and good for them to mix analytical thinking with intuitive feeling in order to get some advantage over competitors since analytical methods are widely spread among competitors and they all can get the same kind of information.

Sadler-Smith and Shefy (2004) suggest that the relationship between intuition and rationality may work in two ways. First, moving from intuition to rational analysis indicates a process in which managers first use their intuition to explore new opportunities and then they could use analytical data to back up their intuitive decisions. Second, proceeding from rational analysis to intuition implies a process in which managers first make decisions through rational analysis, and then they use their intuition to check with the rational results. One of the three executives mentioned having the experience of using intuition as mentioned above. Mr. Jansson mentioned that when Syntronic was about to build a small production line in Sweden, they did an analysis which did not support their decision due to the high construction costs and other regulatory policies. However, based on his experience
of dealing with customers, Mr. Jansson felt that customers might want to go to the factory to see their products being produced and it would be very inconvenient for them if the factory had been built in foreign countries. Thus, they decided to build the production line in Sweden and this turned out to be a big success for them in terms of customer satisfaction.

5.2.1 Utilization of Intuition in Strategic Making Steps
Isenberg (1984, p.86) argues that executives use intuition during all phases of “the problem solving process: problem finding, problem defining, generating and choosing a solution, and implementing the solution”. We believe that these phases correspond to the steps of the rational decision making process that we have described in frame of reference (see chapter 3.6.1- ‘identification, development, selection’). Identification refers to finding out the problem areas; development means to develop courses of action to the problems and selection involves evaluating and choosing among different options. In the following text, we discuss the utilization of intuition in rational decision-making phases.

Identification
In the identification process, managers try to find out strategic problems and define those problems. Two of the three interviewed executives claimed that in this process they used managerial decision-making tools such as Syntronic Decision-making Model or SWOT analysis. However, the executives also let their intuitive feelings involve in the ‘facts’. For example, Mr. Jansson from Syntronic said, when conducting SWOT analysis, his feelings always got in this process (such as feelings toward Syntronic’s strengths or weaknesses). Moreover, Mr. Persson from BT mentioned, when conducting analysis to define strategic problems, it was less likely to get some information, such as competitors’ strategic moves or the market’s future situations. Thus, he had to let his intuition involve in this process.

Furthermore, once strategic problems have been identified, managers usually start a process where they prioritize these problems, because it is hard to solve all the strategic problems simultaneously due to the consumption of resources. We found that intuition might play a role in this process. For example, Mr. Jansson mentioned that after identifying several strategic problems, he had to let his intuition involve in the prioritizing process, because it was difficult to choose one problem over another through rational thinking, since they were all very important.

Development
In the development process, managers start to collect information toward some strategic problems and formulate their courses of action. In the study, we found that in this process, when managers were not required to make quick decisions, they
usually spent as much time as possible to take more information and then to form action plans. However, under complex, uncertain and time-pressured circumstances, they relied on intuition to locate specific information and quickly formulate alternatives. For example, Mr. Persson pointed that under such decision-making contexts, it was just impossible to first collect all the relevant information and then to formulate courses of action. His intuition always helped him locate the information that is critical to the strategic problems, and enabled him to form quick courses of action.

Moreover, we have also found that intuition plays a role when scenario simulation involves in formulating courses of action. One example, Mr. Jansson mentioned that they usually worked with scenarios when formulating their courses of action. Working with scenarios is as if one looks into the future and predicts the possible consequences of a strategic move based on current data. He said that when estimating the possible results, not only facts, but also his gut feelings showed him possible consequences.

**Selection**

In the selection process, managers engage in evaluating and selecting the final decision(s) among different alternatives. In our study, we have found that executives use both rational analysis and intuition in this process. For example, Mr. Persson mentioned that when evaluating options, he used as much facts as possible, and listened to people with different types of experience; Mr. Jansson said that the main tool they used for evaluating alternatives is risk analysis; and Mr. Andell mentioned that they used figures and facts to evaluate options. However, we have found that under complex, uncertain and time-pressured contexts, executives often use intuition in this process of evaluating alternatives and making the final choice. On the one hand, when it comes to evaluating alternatives, intuition serves as an evaluator. In the frame of reference, we have argued that feelings play a very important role in decision-making. We mentioned the study by Bechara, et al. (1997) which suggests that in a fast changing situation where people need to figure out a great deal of unfamiliar information, people’s unconscious feelings play a crucial role in screening information and guiding them toward options. An example from our study could be that Mr. Jansson mentioned that since they were a small company, the way for them to compete with very big companies is to be fast and smart. When the environment was changing rapidly that they needed to make quick decisions or when a strategy was estimated not likely to result in favorable consequences that they had to come up with other strategies quickly, in these moments, he always used his intuitive judgments to deal with the changing stimuli in the environment and to evaluate different alternatives. Another example, Mr. Andell mentioned even though he used facts to evaluate options, he also had lots of feelings toward different
options, when facing rapid changing conditions, he always let his ‘gut feelings’ involve in the evaluation process to make quick judgments about the courses of action.

Agor (1986) argues that, managers’ intuition plays an important role when there are several plausible alternative options to choose. Our empirical findings of intuition’s role in selection seem to confirm this point. For example, Mr. Persson told us that sometimes when it comes to choosing different designing styles, it was hard to choose one solely based on formal analysis, (e.g. which one would be more cost-saving) because every type of designing was similar, very often the only difference among these designs was usually their appearances. Hence choosing among them, according to Mr. Persson, involves lots of intuitive judgments and sometimes he made the decision without being able to tell why he made that.

In sum, we have analyzed the relationship of rational and intuitive decision making in a strategic decision making context from both a general and a detailed perspective. We hence summarize this analysis in a model below.
5.3 **Benefits Associated with Using Intuitive Decision Judgments**

In our frame of reference, we discussed the benefits that managers are likely to get through using intuition in strategic decision-making. According to Behling and Eckel (1991), intuition helps managers increase the speed of making decisions, and it also greatly reduces the amounts of data required for making a formal analytical decision. In our study, two of the three executives we have interviewed agreed on these two points. For instance, Mr. Persson mentioned that by trusting his intuition when making decisions, he could make fast decisions because sometimes speed was very important, and analysis took so long time. If he had not trusted his intuition, he would have had to read lots of reports and to analyze lots of data, which was inappropriate when he was required to make fast decisions. Another manager Mr. Jansson, said when decision-making time was limited, it was impossible to look at all the relevant data and it was necessary to rely on his intuition to make decisions.

In Burke and Miller (1999), they asked top managers about the benefits of using their intuition in decision making, apart from the reduced data and increased decision speed, they have also found that managers’ intuition helps them increase the quality of their decisions in terms of providing a check and balance to formal analysis, leading to a higher quality product and increasing customers’ satisfaction. In our empirical study, although all the three interviewed managers have used both rational and intuitive decision making, they did not directly say that they used intuition to check and balance rational analysis, but they very often used intuition under complex, uncertain and fast changing circumstances. Regarding increased customers’ satisfaction, Mr. Jansson from Syntronic told us that he had used intuition in the decision of building a production line in Sweden, which helped the company achieve an increased customer satisfaction. Regarding a higher quality product, we have not been able to find any evidence that supports this point.

**Bias**

As we argued in the frame of reference (see chapter 3.4.4) that there are pitfalls and traps of the human mind, there are also different kinds of biases exist in intuitive thinking processes, such as pattern seeking, i.e. the deep-seated desire for seeking patterns even when they do not exist. Over confidence, according to Sadler-Smith
and Shefy (2004), the emotional reward of the successes of past intuitive decisions may give rise to the feeling that intuition can do everything and is infallible. Moreover, managers also tend to seek information that confirms their assumptions and disregard the information that is contradictable to their assumptions. All of these biases might block the effective use of managers’ intuition and thus contribute to a failure of decisions. In the empirical study, it is hard for us to ask the executives if they were over-confident, and it was also difficult for them to recall any big negative outcomes made by following their own biases, however we have found some evidence toward the confirmation-seeking bias. For example, the vice president of BT, Mr. Persson, mentioned that when collecting information, he always had a preset in his mind about what kind of information he was going to look for. Thus, he tended to seek information that supported his pre-opinion while ignored other disconfirming evidence.
The purpose of this final chapter is to present the conclusions of our research findings. We will end this chapter by offering some suggestions for future research.

6. CONCLUSIONS

When talking about corporations’ strategic decision-making, it is assumed that deliberative rational analysis yields better choices, and rationalism has been the central theme of the organizational decision-making research (March & Simon, 1993). Hence, when encountering decision making scenarios, managers are required to follow a process of collecting, analyzing data and making the final choice. However, the managerial decision making environment is becoming increasingly complex and demanding, not only because the business world is becoming more globalized and sophisticated, but also executives today need to deal with more information than ever before when making strategic decisions, all of which have contributed to a great difficulty of fully utilizing the traditional rational decision-making model.

When it is getting more difficult to achieve desirable outcomes by solely relying on the traditional rational analysis due to the demanding contexts (e.g. when it is required to make fast strategic decisions), one way that managers can choose is to rely on intuition. The research’s goals were to: 1) discuss whether intuition could be an additional way to rational analysis for managers to deal with strategic decisions under complex, fast changing and time-pressured circumstances; 2) discuss the relationship between rational and intuitive decision making under the contexts of complexity, uncertainty and time pressure; 3) discuss what benefits executives could get from employing intuitive decision making.

Regarding the first research question, we have found that under uncertain, complex and time limited circumstances, executives at least would partly rely on their intuition to make strategic decisions. Furthermore, we have also found that executives tend to use their intuition when information or “hard facts” are limited to
be considered in making decisions. Based on our findings, we conclude that intuition could indeed be an additional way for executives to make strategic decisions.

A second research question is about the relationship between rationality and intuition in strategic decision making. Our research suggests that executives tend to use intuition and rationality in a complimentary manner when making strategic decisions. For example, they may use both facts and gut feelings toward a strategically important decision. We have also found in our research that intuition plays a role in every strategic decision making phases, i.e., identification, development and selection. In the identification phase, managers’ often let their intuitive feelings involve in the process of finding strategic problems. Moreover, intuition plays a significant role in prioritizing strategic problems after they have been found. In the development step, intuition helps managers quickly locate specific information, and it is also very useful when managers worked in scenarios to project possible future consequences of different strategies. When it comes to the selection phase, intuition serves as an evaluator screening different alternatives, and it is of great help when managers were making the final choice, especially when there were several plausible alternative options.

A third research question is about the benefits managers can get from employing intuition in making strategic decisions. We have found that by relying upon intuition, executives could increase the speed of their decision-making; one executive also reported that intuitive decision making contributed to an increased customer satisfaction.

For further research, as we mentioned in the frame of reference, there are several dominant paradigms in strategic decision making literature, i.e., rationality and bounded rationality, politics and power, and garbage can. In this thesis, we have only focused on discussing the interplay of bounded rationality and intuition. In further research, it would be interesting to investigate the role of intuition in politics and the relations between intuition and other paradigms in strategic decision making. It would also be interesting to investigate how cultural factors influence the use of intuition in making strategic decisions.
7. **REFERENCE**

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**INTERVIEWS**


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Appendix

Interview Guide

Background
When making decisions, we, as decision makers, take it as a given, that the more information we have, the better off we are. This is the same in management. When facing decision situations, managers tend to collect as much information as possible, and spend as long time as possible to analyze the information. The traditional rational decision making model suggests that managers make decisions by following a ‘Identification – Development – Selection’ sequence, in which managers enter decision-making situations with clear goals, and are able to clearly compare and distinguish different alternatives in order to pick up the optimal option.

However, time has changed. The world is growing more complex and uncertain, and modern technology has led to a dramatic increase in the volume of information that executives might have to deal with. If executives once imagined they could gather enough information to read the business environment like an open book, they will likely end up in trouble.

Research Area
Purpose: Interplay between rational and intuitive thinking in strategic decision making

- Strategic decision making is defined in our thesis, as one which is important in terms of the actions taken, the resources committed, or the precedents set. In other words, those infrequent decisions made by the top managers of an organization that have effects on the organization’s future.

- Intuition depends on the use of experience to recognize key patterns that indicate the dynamics of the situation. Emotions such as ‘gut feelings’ are always manifested when making intuitive decisions.

- We would like to know how managers use both rational analysis and intuition when making strategic decisions; we are specifically interested in the role of intuition.
• Context: time-pressured, high stakes (strategic decision makings), dynamic conditions (always changing), complexity, uncertainty.

IN THEORY – OUR THEORETICAL FRAMEWORK

<table>
<thead>
<tr>
<th>Context: time-pressured, complex, etc</th>
<th>Defining problems</th>
<th>Step 1: Identification</th>
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<tbody>
<tr>
<td>Cognitive limitation</td>
<td>Setting goals</td>
<td>Step 2: Development</td>
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<td>Collect information</td>
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<td>Formulate alternatives</td>
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<td>Evaluation</td>
<td>Step 3: Selection</td>
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<td></td>
<td>Selection</td>
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In theory, decision making is described as a rational process in which actors usually engage in three steps, namely, ‘goal identification’, ‘alternatives development’ and ‘alternatives selection’. This is known as the traditional rational model, where every step involves rational analysis.

INTERVIEW QUESTIONS

BACKGROUND

How long have you been in the position of leadership in your company?

What is the strategic decision making structure in your company? / How are strategic decisions being made in your company?

What is your role in your company’s strategic decision making?

CONTEXT

What do you think of your company’s competing environments? How is the market situation nowadays?
What do you think of your company’s context both inside and outside? (Contexts in terms of strategic decision making)

Are you always required to make strategic decisions under complex, uncertain and time limited circumstances?

**RATIONAL AND INTUITIVE STRATEGIC DECISION MAKING IN REALITY**

What do you think about the rational/analytical decision making model? Do you feel that you follow these steps or use analytical/rational thinking when making strategic decisions?

How do you make strategic decisions under complex, uncertain and time limited situations? Do you use intuition in strategic decision making especially when you are required to make rapid decisions?

Do you trust your hunches when confronted by an important decision?

Please describe an example, where you made a rapid decision (major one, involved lots of resources in terms of money, time and energy), and you felt it was the right one, but you could not explain why.

Then, we will ask some questions regarding each step of rational decision making and the interaction between rational and intuitive thinking.

**IDENTIFICATION** (incl. defining problems and setting goals)

How do you diagnose your company’s strategic problems? How do you set up your strategies regarding your company’s future?

**DEVELOPMENT** (incl. collecting info and formulating alternatives)

Technological advancement has led to an explosion in the volume of information and thus created a danger of information overload, when collecting information, do you always collect as much information as possible toward a goal, or do you feel that sometimes you have a ‘hunch’ about a particular information? After identifying your company’s strategic problems, how would you formulate the courses of action to solve those problems?

**SELECTION** (incl. evaluating alternatives and making the final choice of the company’s strategy)
How do you evaluate alternatives and make the final choice? What would you do if there were several plausible options? Do you put emphasis on intuitive feelings when evaluating alternatives?

After making the final choice, do you use your intuition to check the selected strategy?

**Bias of Intuition**

There are always two sides to a coin. Intuitive thinking, on the one hand, could be very helpful in terms of time spent in making decisions; on the other hand, it sometimes leads managers astray. The human mind is subject to various kinds of cognitive biases, such as self-confirmation (only favor information that support our arguments) and over-confidence, they can influence the quality of decisions.

Do you have an example where you ‘felt’ that it was the right decision but in the end it turned out to be a bad one? If so, could you explain why?