Introduction of information management software from Sweden to China under the awareness of culture differences

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Abstract

Culture plays a key role in international business. This work-based thesis undertakes a case-study research of an information management software introduction process from Sweden to China. To design interview questions, the author used Prof. Hofstede’s cultural dimensions as the base theory and reviewed a number of literatures which apply this theory in the IT area. After interviews with both Swedish and Chinese sites, the results were analyzed with the theoretical data to examine how cultural differences influence people in a software introduction process. The author also applied software culturalization from Marble and Lu. Compared to the author’s own experiences and interview data, a recommendation list is stated as a guide of how to succeed in software introduction under different cultural backgrounds.

Key words: cultural dimensions, software culturalization.
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My thanks would also go to all the co-workers who have helped me in Company X. However, for the reason of confidentiality, I cannot reveal their names. I feel deeply appreciate since they offer me the great opportunity to write my dissertation with them so that I can investigate into the area that I am interested in and is all about practical issues which I always want to.

I also owe my sincere gratitude to my friends, my fellow classmates and all the teachers who have participated in all of my presentations. They have given me much encouragement and wonderful suggestions as well.
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1 Introduction

Once upon a time, a salesman – let’s call him Jack – went to an Arab country to sell Coca-Cola. He was very confident in the beginning since people there did not know Coca-Cola at that moment. Jack thought if he put a lot of efforts on advertising he could easily capture the market. Unfortunately, this was his first time into this country, let alone its language. Therefore, our smart Jack decided to draw a comic to introduce his product. The comic was made up with three pictures. The first picture showed a man creeping in the desert, exhausted and dying. The second picture showed the man drinking a bottle of Coca-Cola and the man in the third picture was full of sprits, smiling and energetic. He posted this comic everywhere but after three months, he still could not sell out a bottle. Jack was so frustrated that he decided to get back. For a long time, he could not figure out the reason for his failure until one day he accidentally watched a TV show introducing Arabian culture. He just could not help crying out: “How would I know they read from right to left?!”

From the famous story, it is not hard to see how important a role culture plays in business. But what is culture? Krober and Kluckhohn (1952) had 164 definitions for culture and Sackmann (1992) discusses how culture has been structured in various research as ideologies, coherent sets of beliefs, basic assumptions, shared sets of core values, important understandings, and the collective will. Other researchers also have a variety of suggestions but none of them is considered as a unique definition. However, they generally agree that culture consists of meaningful patterns underlying various manifestations (Kappos and Rivard, 2008). There are some visible manifests which includes artifacts and practices. Artifacts are as rituals, stories, clothing and physical (Martin, 1992, 2002; Schein, 2002) while practices can be listed as structure, technology and procedures (Martin 1992, 2002; Sackmann 1992). Besides visible manifestations, there are ideational ones such as values, beliefs, and assumptions (Martin 2002; Sackmann 1992; Schein 1992). Some researchers believed in the integration idea of culture, and define it as consisting of those interpretations that are shared by the members of a collective (Kappos and Rivard, 2008). Other researchers, on the other hand, do not believe that members of a collective always share interpretations of manifestations (Hofstede 1998; Smircich 1983). A group of researchers argued that the ambiguous concept of culture is “an inevitable and pervasive aspect of contemporary life”; they propose that “any cultural manifestation can be, and is, interpreted in a myriad of ways” and believed that “no clear organization-wide or subcultural consensus stabilizes” (Frost et al., 1991, p.8). Above the more visible and less visible aspects of culture, Schein has described both of them by three-level model of culture (Schein, 1985a, 1985b).

Schein believed that “basic assumptions are at the core of culture and represent the belief systems that individuals have toward human behavior, relationships, reality, and truth” (Leidner and Kayworth, 2006, p.359). These basic statements described structures people used to identify situations and understand current events, activities, and human
relationship so that to form the basis of collective action (Reichers and Schneider, 1990; Sackmann 1992; Sapienza, 1985, Van Maanen and Barley, 1985). The next level described “a manifestation of culture that signify espoused beliefs identifying what is important to a particular cultural group” (Leidner and Kayworth, 2006, p.359). This level manifests why people behave in specific ways under different cultures. The third level represents artifacts such as art, technology and behavior patterns as well as myths, heroes, language, ceremony etc. (Pettigrew, 1979). These artifacts are the most visible manifestations of culture (Leidner and Kayworth, 2006). In the end, Schein argued that basic assumptions are hard to study since they are invisible and preconscious. Thus, the majority of theories that conceptualize the culture do so in terms of reference group value orientations (Jackson, 1995). Hofstede’s culture dimensions theory is one of the examples. Posner and Munson (1979) claimed a tight linkage exists between cultural values and the subsequent behaviors and actions of social groups. Therefore, values can be considered as a set of social norms that define the rules or context for social interaction through which people act and communicate (DeLong and Fahey, 2000; Keesing, 1974, Nadler and Tushman, 1988). Those social norms will influence subsequent behaviors of firm members through acting as a means of social control that sets the expectations and boundaries of appropriate behaviors for members (O'Reilly and Chatman, 1996). Therefore, “the study of organizational values may be particularly useful in explaining certain behaviors with respect to how social groups interact with and apply IT in organizational contexts (Leidner and Kayworth, 2006, p.359)”.

Culture is the thing that “is often partially blamed when organizations experience failure” (Leidner and Kayworth, 2006, p.357). Jack in the story, for example, claimed he was a victim. Leidner and Kayworth (2006) also believed that “culture is a critical variable in explaining how social groups interact with IT”. They have reviewed a large number of IT literatures related to culture issue and found they fell into six (6) categories: 1) culture and IS development; 2) culture, IT adoption, and diffusion; 3) culture, IT use, and outcomes; 4) culture, IT management, and strategy; 5) IT’s influence on culture; and 6) IT culture. All of the above areas are based on two large research streams: national culture and organizational culture. After reviewing, they believed that “culture is a critical variable in explaining how social groups interact with IT. (Leidner and Kayworth, 2006, p.357)” They also argued that “the predominant theoretical approach to culture has been to conceptualize it, at any level, in terms of values (Leidner and Kayworth, 2006, p.357)”. Taking a values-based perspective will provide a rich foundation of culture theory to IS-culture research. This value approach will enable researchers “to look at the contradictions that might occur across national, organizational, and subunit levels as well as to uncover the similarities in the IT-culture research across these levels (Leidner and Kayworth, 2006, p.360)”. Thus, culture studies allow people to reveal the cultural conflicts that might come up in the IT area. By understanding those conflicts, we can find solutions to cultural problems related to IT.
1.1 Own Experiences

I have been an exchange student from China for two years and currently studying in Sweden. When it comes to culture issues, I have been told before leaving China. However, you can never be fully prepared for culture shock. Fortunately, the cultural differences I faced did not make me uncomfortable. For example, a well-known difference is you can call teachers by their names in Sweden. In China, we call them by their title and last name, such as Professor Li or Teacher Zhang, even outside class. Actually, it took me some time to get used to call out the names of teacher. Another difference is that students are free at class, not only they can stop teachers anytime with questions, but also they can just go out to pick up a phone call during class. The former is what Chinese teachers eagerly encourage us to do while few students do; the latter one is totally unacceptable in China. The most surprising and comfortable diversity is that exams are no longer scary. Failing an exam will be a disaster in China. In Sweden, no one will blame you of failing. You can take one exam several times until you pass and no one will accuse you of not being hard-working enough.

One day, I accidentally visited a webpage introducing Professor Geert Hofstede about his cultural dimensions. The way of explaining culture differences are so interesting and it does make sense. He explained that students in those countries with higher power distance show more respect to teachers than those from lower power distance countries do. In the ranking list, China does have higher score than Sweden. He also pointed out that students from individualistic countries are expected to express their own opinions during class while those from collectivistic countries are only willing to talk when forced by groups. From the data he collected, Chinese are more collectivistic while Swedes are more individualistic. What is more, Sweden’s last position on masculinity explains that students are not afraid of failing of exams since those from feminine society will take failing of exams as minor incident. This theory is so interesting and inspiring that I want to apply it to more areas. Those concepts from cultural dimensions will be introduced later in this dissertation.

Those are how cultural differences influence school activities. Culture differences can also affect business actions. I am honored to have this opportunity to write this dissertation with a Swedish company, which wants to expand their market in China. This company hereinafter referred to as Company X due to privacy reasons, is a global consulting company which provides product information management for its clients. They provide technical documentation with operations in many countries in Europe as well as in China. Started from 1991, Company X is now is one of the global leading suppliers on information logistics solutions and product information. Their customers are global leaders, at the edge of the telecom, software, automotive and industry sectors. They work with information, its architecture and with the design and delivery of content. They also develop software solutions for information management, produce effective information, diagnostic and training material using superior processes, tools and methods with outstanding results. One of the software they want to put on to Chinese market is one used to manage product
information. When we met, they had just started the project and the sales manager from China will pay a visit here. They realized they will confront a number of problems caused by culture differences. Reducing the gaps will promote sales. Therefore they wanted to have a list of practical rules while doing business in China. That is the area that I am interested in so I accepted this work with pleasure.

1.2 Research Questions
This dissertation is ultimately going to research on the question **how** to make a successful software introduction under different cultures. By answering this **how** question, **what** is the differences and how people are influenced by them. Thus, I raised my research questions.

- What are the cultural differences between Sweden and China, and how have people’s behaviors been influenced in the IT area?
- How to provide a successful information management software introduction under the awareness of those cultural differences?

The first question is based on literature studies while the second one is an empirical investigation. Understanding the cultural differences between the two countries is the base to investigate the different behaviors of people. I will try to give recommendation lists to each question respectively. Question 2 will partially be answered by theory combined with my own experiences and interviews. The other part is logically concluded from the answers of question 1 and other empirical data.

1.3 Aims and Objectives
The aim of this dissertation is to undertake a qualitative investigation of gaps between a Swedish producer and Chinese consumer focusing on culture issues, to identify factors which course those gaps, in order to build a recommendation list which leads to the successful software introduction.

To achieve the aim and answer the research questions, a set of objectives are stated as follows:
- To review a number of literatures on cultural issues addressed in IT areas.
- To interview the producer sites – both Swedish and Chinese – about communicating with consumers from different culture backgrounds.
- To make realistic recommendations on how to introduce the software on theoretical level.

1.4 Scope and Limitation
By looking back into the research questions, the **how** question will fall into the culture, IT adoption, and diffusion area of the six (6) areas raised by Leidner and Kayworth (2006). This dissertation will focus on the cultural differences between Sweden and China, as targeted at the national level. This research is also focusing on the current period of time. Culture is always changing. China is different from what it was one hundred years ago. We
can foresee that the culture in China or in western countries will change maybe in another one hundred years. They may be merged since the world is becoming smaller and more and more the countries are becoming internationalized. Thus, my research only concerns contemporary events.

1.5 Related Research

As described in section 1.4, my cultural question will fall on national level. There are many researchers contributed in this area on this level, such as Hofstede, Trompenaars and Leidner and Kayworth. Hofstede’s (1983) theory describes culture along the dimensions of power distance, uncertainty avoidance, individualism vs. collectivism, masculinity vs. femininity, and long-term oriented vs. short-term oriented. Trompenaars (1996), on the other hand, have also the similar polar opposite values, such as universalism vs. particularism, affective versus neutral relationships, specificity vs. diffuseness, achievement vs. ascription, and internal vs. external control. Among them all, Hofstede’s cultural dimensions theory is “the most popular conceptualization of national culture” (Leidner and Kayworth, 2006, p.359). Moreover, when I stated my own experiences, I also found that Hofstede’s theory is very inspiring. It helps me to explain the manifests that I faced. I have only used it in school activities and I will see if it can be applied into work places as well. Therefore, Hofstedes’s cultural dimensions are my basic theory in answering question 1, the what question.

I also have searched for literatures which talk about software culturalization. The first one that caught my eyes is the one by Kersten, Kersten and Rakowski (2002) in which they discussed about software and culture. They argue that it is not enough to localize the software interface when going international. The core functionality of the software has a tighter relationship with culture. In that case, “deep culture can be embedded into application software in a modular way”. (Kersten, Kersten and Rakowski, 2002, p.1) Another literature from Marble and Lu is published five years after Kersten, Kersten and Rakowski which actually expanded the former module. Marble and Lu (2007) also argued that interface and core functionality need to be localized when software go internationally. Besides these two points, Marble and Lu added a third perspective describing that how to deliver the software need to be focused on as well. They expanded the model from Kersten, Kersten and Rakowski (2002) and built their own model with three perspectives: software interface, core functionality and delivery. They even put this model in a Chinese context and provided instantiations respectively. The suggestions are practical so I will apply the model as my basic theory to explain partly on the how question.

1.6 Target Group

This dissertation target both academic and business organizations. It concludes with a list of practical recommendations how to introduce software from Sweden to Chinese business
and organizations under the awareness of culture differences. People who are interested in this area will also be benefit from this dissertation.

1.7 Research Path

![Diagram of research path]

Figure 1.1 Research Path

This path graph as shown in Figure 1.1 will lead me when I do my research. First, I raise my research questions. The second step is to review related literature and find suitable methodologies. The literatures will provide the theoretical framework and methodology that will guide me in empirical data collection. Theories will help me with design of interview questions. I will analyze interview result and other empirical data to answer the research questions and draw some conclusions.

After each section, this figure will grow with concrete information. Therefore, after my research questions have been settled in Chapter 1, this figure is updated as shown in Figure 1.2. Each of my chapters will be designed according to the research path.
1.8 Thesis Overview

Chapter 2 Methodology
This chapter mainly concerns what methodology I am going to use in my dissertation. After comparing action research and case study, the latter is chosen with the reasons being stated later. In this chapter, I also show how I apply this methodology in my case.

Chapter 3 Theory
This chapter describes the theories used in this dissertation. Three theory aspects are used in this dissertation. One is the Cultural Dimensions by Prof. Geert Hofstede (Hofstede, 2001), the second one is research contributions from the literatures using Hofstede’s theory, and the last is the Software Culturalization Model by Marble and Lu (2007) who based on their studies on the findings of Kersten, Kersten and Rakowski (2002). According to Leidner and Kayworth (2006), Hofstede’s theory is the most widely used to conceptualize national cultures. Leidner and Kayworth reviewed eighty-two (82) articles related to IS/IT area and found that over sixty percent (60%) applied Hofstede’s theory.
Chapter 4 Data Collection
This chapter uses the data collection strategy stated in Chapter 2 to collect empirical data for this dissertation. The three data sources are documentation, participant observations and interviews. Documentation is used to provide background information such as information about the company. Participant observations and interviews are utilized to provide additional empirical data.

Chapter 5 Data Analysis
This chapter analyzes the empirical data from Chapter 4 and compares them to the theories in Chapter 3.

Chapter 6 Conclusions
Based on Chapter 5, this chapter answers the research questions raised in Chapter 1. After interpreting my conclusions, I discuss how I evaluate my results and generalize them.
2 Methodology
This chapter mainly concerns what methodology I am going to use in my dissertation. After comparing action research and case study, the latter is chosen with the reasons being stated later. In this chapter I also show how I apply this methodology in my case.

2.1 Action Research vs. Case Study
Professor Chris Hart stated that his recommended methodology would be action research in a work-based dissertation. (Hart, 2008) However, I would like to choose case-study research as my methodology and this section states the reasons.

It is true that case-study research and action research have something in common. They both are “concerned with the researcher’s gaining and in-depth understanding of particular phenomena in real-world settings” (Blichfeldt and Andersen, 2006, p.3). On the other hand, they also have some differences, which lead me to choose case-study research over action research in my case. According to Blichfeldt and Andersen (2006), a case study researcher is mostly concerned with some specific phenomena; an action researcher is often involved in some practical situations where the issues in them lead the research project. Furthermore, case-study researchers target academic contribution while action researchers focus solving a practical problem which is considered as “(action researchers) ‘have forgotten’ to report in detail their research activities and how they have arrived ‘step-by-step’ at their interpretations and actions, which usually means that the knowledge creation of action research is partially neglected in the literature” (Grønhaug and Olsson, 1999, p.13) Checkland and Holwell (1998) also pointed out that most case studies declare and discuss intellectual framework of ideas while most action researchers not. Yin (2003) confirmed this by emphasizing the importance of the intellectual framework for case-study researchers bring to study. Last but not the least, McKay and Marshall (2001) pointed out action researches are difficult to generalize the results.

In my case, I am not physically involved in the sales process. I did some relevant work as will be mentioned later while my most interest is to investigate the phenomena. To meet academic requirements, my study will target academic community. Theoretical framework is considered to lead my research and my results need to be able to be generalized. In sum, case study is my first choice in this dissertation.

2.2 Case study
My study will utilize the case study research with the reasons to be explained later in this section. A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident. There are many strategies while doing a research, such as experiment, survey, archival analysis, history and etc. The choose of strategies based on three conditions: 1) the type of research question posed, 2) the extent of control and
investigator has over actual behavioral events, 3) the degree of focus on contemporary as opposed to historical events. Figure 3 shows how those five strategies been described by the three conditions.

![Figure 2.1 Relevant Situations for Different Research Strategies (Source: Yin, 2003)](image)

The reasons why I choose case study in my thesis are stated as follows according to the three conditions:

1. Types of research question
   I have two research questions. The first one is “What are the cultural differences between Sweden and China, and how have people’s behaviors been influenced in the IT area?” The other is “How to provide a successful information management software introduction under the awareness of those cultural differences?” The second one is a “how” question. By solving this problem, I will also investigate the reasons which would be the answer for the first question. Therefore, this kind of question is likely to lead to the use of case studies or histories.

2. Extent of control over behavioral events
   No requirement of controlling behavioral event in my case since I cannot manipulate how the sales process would be. Although I may participate in some of the work, e.g. software translation, my standpoint is still an outsider.

3. Degree of focus on contemporary as opposed to historical events
   Since my research question is concerning about the status quo and the case is a contemporary event. Hence, case study is preferred in examining contemporary events.

After analyzing those three answers, the conclusion is clear that case study is the most suitable research strategy in my case.
When doing case study, I would like to follow Yin’s recommendation. There are four stages: 1) Design the case study, 2) Conduct the case study, 3) Analyze the case study evidence, and 4) Develop the conclusions, recommendations and implications.

Designing the case study is the first stage in the case study methodology recommended by Yin (2003) and he also proposed five components of research design that are important for case studies:

- A study’s questions
- Its propositions, if any
- Its unit(s) of analysis
- The logic linking the data to the propositions
- The criteria for interpreting the findings.

According to the five components mentioned above, here are the ones in my case:

- **A study’s questions**: How to introduce a foreign information management software in China (and why)?
- **Its propositions, if any**: I propose the process of introducing the software would be related to cultural issues.
- **Its unit(s) of analysis**: In my case, I am analyzing the company in both sites in Sweden and China. My focus is the process of the new software introduction.
- **The logic linking the data to the propositions**: I would like to analyze the interview data to see if they support the theoretical data and then give out my suggestions.
- **The criteria for interpreting the findings**: After interviews, data would be analyzed to see if it matches with the theory.

While designing the case study, I would like to ensure the value of the study in the mean time. Four tests, which have been summarized frequently in textbooks, are commonly used as the criterion on judging the quality of research. The four tests are: (Kidder and Judd, 1986)

- **Construct validity**: establishing correct operational measures for the concepts being studied
- **Internal validity**: establishing a causal relationship, whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationship
- **External validity**: establishing the domain to which a study’s findings can be generalized
- **Reliability**: demonstrating that the operations of a study – such as the data collection procedures – can be repeated, with the same results

Case studies are one of the empirical social research forms so those four tests can be also applied on case studies. Yin (2003) identified several tactics for each validity and pointed out in which phase will those tactic occurs. (Figure 2.2)
Construct validity concerns with the issue that a case study investigator sometimes would use “subjective” judgments to collect the data. To solve this problem, I used variety of sources of evidence gathered from articles, books and data from Internet and also empirical data collected by documentations, interviews, and participant observation. Using multiple evidence sources is one of the principles when collecting data which I will follow the principle in the data collection part. I would also establish chain of evidence which will be discussed later in this chapter.

Internal validity is only for explanatory or causal studies. As I am going to use theories to explain the Chinese customers’ behaviors, this validity is also what I have to concern. Explanation-building, also known as one of the analytic techniques, is considered to be a special type of pattern matching, but a more difficult one. This strategy is to build an explanation first and analyze the case study data. I will use this tactic to ensure the internal validity in my case.

External validity is a kind of test measuring whether a study’s contribution can be generalized beyond the current case study. By ensuring external validity, I will use theory since my case study is a single-case one.

Reliability is the most familiar test which enables a later investigator followed the same processes as I described and can conduct the same case study again which still leads to the similar conclusion. In order to provide a valid measurement, I would use case study protocol which is considered a major tactic to increase reliability in a single-case study. A case study database will also be built which is also one of the principles of data collection.

Conducting the case study is the second stage of the methodology recommended by Yin (2003). Here, Yin suggests two tasks which will lead us to a successful project. First is
preparing for data collection and the second one is collecting the evidence. When it comes to collecting the data, I would also like to refer to Yin (2003) who proposes six sources. They both have strengths and weaknesses as shown in table 2.1. Yin (2003) also suggested three principles of data collection for case studies: Use multiple sources of data, create a case study database and maintain a chain of evidence.

<table>
<thead>
<tr>
<th>Source of Evidence</th>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Documentation</td>
<td>• stable - repeated review</td>
<td>• retrievability - difficult</td>
</tr>
<tr>
<td></td>
<td>• unobtrusive - exist prior to case study</td>
<td>• biased selectivity</td>
</tr>
<tr>
<td></td>
<td>• exact - names etc.</td>
<td>• reporting bias - reflects author bias</td>
</tr>
<tr>
<td></td>
<td>• broad coverage - extended time span</td>
<td>• access - may be blocked</td>
</tr>
<tr>
<td>Archive</td>
<td>• Same as above</td>
<td>• Same as above</td>
</tr>
<tr>
<td></td>
<td>• precise and quantitative</td>
<td>• privacy might inhibit access</td>
</tr>
<tr>
<td>Interviews</td>
<td>• targeted - focuses on case study topic</td>
<td>• bias due to poor questions</td>
</tr>
<tr>
<td></td>
<td>• insightful - provides perceived causal inferences</td>
<td>• response bias</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• incomplete recollection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• reflexivity - interviewee</td>
</tr>
<tr>
<td></td>
<td></td>
<td>expresses what interviewer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>wants to hear</td>
</tr>
<tr>
<td>Direct Observation</td>
<td>• reality - covers events in real time</td>
<td>• time-consuming</td>
</tr>
<tr>
<td></td>
<td>• contextual - covers event context</td>
<td>• selectivity - might miss facts</td>
</tr>
<tr>
<td>Participant Observation</td>
<td>Same as above</td>
<td>• reflexivity - observer's presence might cause change</td>
</tr>
<tr>
<td></td>
<td>• insightful into interpersonal behavior</td>
<td>• cost - observers need time</td>
</tr>
<tr>
<td>Physical Artifacts</td>
<td>• insightful into cultural features</td>
<td>• Same as above</td>
</tr>
<tr>
<td></td>
<td>• insightful into technical operations</td>
<td>• bias due to investigator's actions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• selectivity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• availability</td>
</tr>
</tbody>
</table>

Table 2.1 Types of evidence (Source: Yin, 2003)
After considering strengths, weaknesses and availability of the different types of evidence carefully, I decided to use documentation, interviews, direct observation and participant observation as my sources of evidence.

*Documentation:* Documentary information is widely used in numerous case study researches. They can offer specific and exact details which makes documentations an important role when collecting data in case studies. I collect some background information from the Internet so that I could provide comprehensive information to my readers and help them to understand my study better.

*Interviews:* It is a very essential to the source of case study as they can provide us more efficient and trustful data. In case of bias due to poor questions, I would design my interview questions more carefully.

*Participant observation:* I am with the organization every working day which enables me to contribute to this dissertation through participant observation.

After using multiple sources of evidence, I would like to converge them into one fact. There are convergence and non-convergence of multiple sources of evidence as shown in figure 2.3:

![CONVERGENCE OF EVIDENCE](image)

That is to say, all the multiple sources I choose should aim at corroborating the same fact. By using multiple sources could address the potential problems of construct validity. Maintaining a chain of evidence is the third principle when collecting data which also increases the reliability of the information. Figure 2.3 shows the process.

I would follow the steps given by the figure to conduct my case study. Not only from down to top but also, when looking back from top to down, we could also see the chain there. Yin (2003) states that data analysis consists of examining, categorizing, tabulating, or otherwise recombining the evidence to address the initial propositions of a study. He also presents some possible analytic techniques: pattern-matching, explanation-building, time-series analysis logic models and cross-case synthesis. The last stage is developing the
conclusions, recommendations and implications. It is the contact point between the user and the researcher. In order to give my readers a clear view of my thesis, detailed description and results from the statistical tests will be included. And I will also provide explanations of those results.

![Figure 2.4 Maintaining a chain of evidence (Source: Yin, 2003)](image)

### 2.3 Research Path

Figure 2.5 shows the research path after this chapter which determines the methodology and data collection sources.

![Figure 2.5 Research path after Chapter 2](image)
3 Theory

This chapter describes the theories used in this dissertation. Three theory aspects are used in this dissertation. One is the Cultural Dimensions by Prof. Geert Hofstede (Hofstede, 2001), the second is research contributions from the literatures using Hofstede’s theory, and the last is the Software Culturalization Model by Marble and Lu (2007) who based their studies on the findings of Kersten, Kersten and Rakowski (2002). According to Leidner and Kayworth (2006) Hofstede’s theory is the most widely used to conceptualize national cultures. Leidner and Kayworth reviewed eighty-two (82) articles related to IS/IT area and found that over sixty percent (60%) applied Hofstede’s theory.

3.1 Cultural Dimensions

“Culture is more often a source of conflict than of synergy. Cultural differences are a nuisance at best and often a disaster.”

Prof. Geert Hofstede, Emeritus Professor; Maastricht University

Prof. Geert Hofstede became interested in national cultural differences by chance in the late 1960s and has been able to collect a large data to study them. Between 1967 and 1973, Hofstede analyzed a large data collected by IBM. The data was based on employee values scores covering seventy-four (74) countries and regions. From the studies, Hofstede was able to develop four (4) primary dimensions to describe cultural differences. The four (4) initial dimensions are: 1) Power Distance (PDI), 2) Uncertainty Avoidance (UAI), 3) Masculinity (MAS) and 4) Individualism (IDV). Later on around 1985, Hofstede added a fifth dimension which is called Long-Term Orientation (LTO). This dimension is based on Confucian dynamism and was inspired by an additional international study with Chinese employees and managers. With these five dimensions, Hofstede conducted a comprehensive study on how culture influences the values under various environments, such as family, school, workplace, etc. In this dissertation, I would only focus on the aspect of workplace. After introducing the general idea of cultural dimensions, I also view a number of literatures using Hofstede’s theory. Combined conclusions from those literatures and the values of cultural dimensions of Sweden and China, there will be logic result on how people from different countries behave differently in IT area.

3.1.1 Power Distance

The first dimension of national culture is called Power Distance (PDI), which Hofstede (2001) defines as the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally. Simply speaking, power distance index is used to measure the degree of inequality in society.

Workplaces high in power distance index are based on hierarchical system which supervisors and subordinates cooperate unequally. Power is centralized and underling staffs
are expected to be told what to do. Numbers of supervisory personnel are large and structured hierarchically. Co-workers report to each one according to the tall hierarchical system level by level. Salary ranges from top to bottom are large which means superiors may have much more income than subordinates.

Workplaces low in power distance index, on the other hand, also have hierarchical system while only for convenience and the roles may change. Supervisors and subordinates consider themselves equally and they may change their roles the next day. There are not many supervisory personnel and their powers are decentralized in the flat hierarchical system. Salary system show narrow gaps between top and bottom.

Table 3.1 shows the scores of Sweden and China toward their Power Distance Index with the ranking among the seventy-four (74) investigated countries. The larger score number is, the higher power distance will be in the country. Data in the table shows China is higher than Sweden on PDI. In workplaces, this higher value indicates more unequal feelings between different levels in hierarchical system in China compare to that of Sweden. There would be more supervisory personnel in a Chinese company and the salary range between higher and lower levels is higher. Subordinates in Sweden have more tendencies on consulting while Chinese ones tend to be told what to do.

<table>
<thead>
<tr>
<th></th>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>31</td>
<td>67-68</td>
</tr>
<tr>
<td>China</td>
<td>80</td>
<td>12-14</td>
</tr>
</tbody>
</table>

Table 3.1 PDI Values for Sweden and China

3.1.2 Uncertainty Avoidance

The second of the five dimensions of the national culture is called Uncertainty Avoidance (UAI) which Hofstede (2005) defined as the extent to which the members of a culture feel threatened by ambiguous or unknown situations. Human life is full of uncertainty about the future. We are trying to cope with technology, law and religion all the time.

Workplaces high in uncertainty avoidance index behave as rule-oriented. They employ more specialists and they believe in technical solutions. There are fewer changes of employers and top managers are concerned with daily operations. People in this kind of society know better on implementation instead of invention.

Workplaces low in uncertainty avoidance index dislike formal rules. They believe problems can be solved without formal rules. There are more changes of employers in organizations. Ambiguity and chaos are acceptable. People are better at invention so there are more trademarks.

<table>
<thead>
<tr>
<th></th>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>29</td>
<td>70 – 71</td>
</tr>
<tr>
<td>China</td>
<td>30</td>
<td>68 – 69</td>
</tr>
</tbody>
</table>

Table 3.2 UAI Values for Sweden and China
Table 3.2 shows the scores of Sweden and China of their Uncertainty Avoidance Index with the ranking among the seventy-four (74) investigated countries. Data shows Sweden and China share a same level on this value. Their scores are very close to each other and the rank indicates they are both low uncertainty avoidance countries. According to Hofstede’s prediction, both of the two countries hate formal rules and they are tolerant of ambiguity and chaos. People in both countries are innovative so they have more trademarks.

3.1.3 Individualism
The third dimension is labeled individualism, versus its opposite, collectivism. This dimension describes the relationship between the individual and the collectivity that exists in society. It is also reflected of the way people live together and has implications for values and behavior. Individualism is regarded as a basis of well-being in some cultures while it is seen as isolating in some other cultures.

Workplaces in an individualistic culture provide their employees with the work the employees are interested in. They perform better when assigned tasks individually and everyone knows who is responsible to what. Relationship in organizations are avoided and some companies even have the rule that if there is marriage between two employees, one of them should leave.

Workplaces in a collectivistic culture often not provide the same interest as the employee’s individual interest. Hiring process considers in-group and relatives or family members are preferred to be co-workers. Employees perform better when they work in a group and anonymously.

Table 3.3 shows the scores for Sweden and China on individualistic index. The larger the score is, the more individualistic the culture will be. Data shows Sweden is more individualistic than China. From the prediction, Chinese are supposed to perform better if they work in a group while Swedes prefer to work individually. Relatives can be found in Chinese companies and they tend to hire people who they knew while Swedes will not reply on relationship as much as Chinese do.

<table>
<thead>
<tr>
<th></th>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>71</td>
<td>13 – 14</td>
</tr>
<tr>
<td>China</td>
<td>20</td>
<td>56 – 61</td>
</tr>
</tbody>
</table>

Table 3.3 IDV Values for Sweden and China

3.1.4 Masculinity
The fourth dimension is called masculinity, on the one side versus its opposite, femininity. Hofstede has given definitions to both terms respectively: a society is called masculine when emotional gender roles are clearly distinct: men are supposed to be assertive, tough, and focused on material success, whereas women are supposed to be more modest, tender, and concerned with the quality of life; a society is called feminine when emotional gender
roles overlap: both men and women are supposed to be modest, tender, and concerned with the quality of life. Thus, masculinity and femininity are used to estimate whether the gender roles are clear in societies.

In masculine workplaces, people live in order to work. They would sacrifice leisure time for more money. Men have to go to work while women can choose to stay at home. There are more men than women in professional jobs.

In feminine workplaces, people work in order to live. They prefer more leisure time instead of more money. Men and women can both decide to have a career or not. You can find both men and women in professional jobs.

Table 3.4 shows the scores of masculinity of Sweden and China. Sweden ranks the most un-masculinity society among seventy-four (74) investigated countries while China is relatively more masculine. This diversities show the roles of men and women are distinct more clearly in China than that in Sweden. It cannot be imagined that a man does not go to work in China while this situation is acceptable in Sweden. People in China are more willingly to trade their leisure time with more money while Swedes prefer enjoying their spare time. More men than women will be found in professional jobs in China while in Sweden, women can be found more easily in any area.

<table>
<thead>
<tr>
<th></th>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>5</td>
<td>74</td>
</tr>
<tr>
<td>China</td>
<td>66</td>
<td>11–13</td>
</tr>
</tbody>
</table>

Table 3.4 MAS Values for Sweden and China

3.1.5 Long-Term Orientation

The last and the later-added dimension of national cultures is named long-term orientation (LTO), versus short-term orientation. The definition of LTO according to Hofstede (2005) is the fostering of virtues oriented toward future rewards – in particular, perseverance and thrift. Short-term orientation, on the opposite side, stands for the fostering of virtues related to the past and present – in particular, respect for tradition, preservation of “face”, and fulfilling social obligations.

In the environment of long-term orientation, family and work are connected thus family enterprises are popular. Workers are seeking for a stable and harmonious hierarchy and leisure time is unimportant. People in this kind of society value high on lifelong personal networks which is called guanxi in Chinese.

In short-term-oriented environment, personal stability and steadiness are not emphasized. People value more on freedom, rights, achievement, and thinking for oneself in main work. Leisure time is indispensable. Personal loyalties vary with business needs.

<table>
<thead>
<tr>
<th></th>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>33</td>
<td>23</td>
</tr>
<tr>
<td>China</td>
<td>118</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 3.5 LTO Values for Sweden and China

Table 3.5 shows the scores and ranks of long-term orientation for Sweden and China which the latter ranks number one on this dimension among thirty-nine (39) investigated countries. Chinese donate all their lives on building relationships and guanxi is considered vital to succeed. They work extremely hard and are interested in the outcome ten (10) year later. Swedes are relatively short-term oriented and according to Hofstede (2007), they do not rely on relationship as much as Chinese do.

3.1.6 Summary
Figure 3.1 shows the overview data of Sweden and China of culture dimensions.

![Figure 3.1 Comparison of cultural dimensions between Sweden and China](image)

From this chart, we could see that among the five dimensions, Sweden and China only have one value in common – UAI. These two countries show large differences in other four dimensions. China ranks higher in PDI while Sweden shows more individualism. Sweden scores little in MAS while China behaves averagely on this value. In the last dimension, China is much more long-term oriented than Sweden.

3.2 Literatures Using Hofstede’s Theory
After exploring the cultural dimensions of Hofstede, we may wonder how it would affect people’s attitudes toward information technology when people come from various countries under different cultures. I believe there must be some association between cultural
differences and their behaviors in IT area. Shore and Venkatachalam (1996) pointed out that national culture has an influence on the success of information technologies transfer from host to recipient countries. During the past few decades, there were a number of researchers based their studies on information system by cultural level. All of the ones I choose to review have mentioned Hofstede’s cultural dimensions.

Power distance index, as listed in the first cultural dimension in Hofstede’s theory, ranked the second in the number of using when it comes to the studies addressed the question of whether culture influences IT adoption. However, the answers to that question are quite controversial. DeVreede et al. (1998) believed that, “as power distance increases, the rate of Group Support System (GSS) acceptance does also, presumably since subordinates are less likely to question their supervisor’s decisions in high power-distance cultures” (DeVreede, Jones and Mgaya, 1999, p.24). Contrary to the positive relationship between power distance and GSS acceptance, Hasan and Ditsa (1999) argued that it is more likely that successful adoption of IT occur in a low power-distance environment by virtue of the fact that in such environments, underling IT staff will be more likely to give advice to managers, presumably leading to more favorable IT adoption outcomes (Hasan and Ditsa, 1999).

Uncertainty avoidance was the most used value. Researchers concluded that countries high in uncertainty avoidance are less likely to adopt new technologies. High in uncertainty avoidance reflects people are less comfortable with uncertainty. Since IT is somehow related to risks, those high in uncertainty avoidance will be less willingly to use new technologies. Png et al. (2001), for example, having surveyed 153 businesses across 23 countries, they decided that countries high in uncertainty avoidance are less likely to adopt frame relay technology. Similarly, a study surveying a group of university students, Thatcher et al. (2003) determined that students from countries high in uncertainty avoidance were less willing to experiment with new information technologies. Other studies concluded similar results (Jarvenpaa and Leidner 1998; Straub 1994; Straub, Keil, and Brenner 1997).

Individualism is used when examined the influence on IT ethical and social issues. Shore et al. (2001), for example, were trying to find out the interaction between national values and intellectual property rights. They concluded that students from countries rating high in individualism perceived more of an ethical problem with software piracy than students coming from countries low in individualism. Milberg et al. (1995) also used Hofstede theory and found that countries rated higher in individualism tend to have less government involvement in privacy regulation.

After these conclusions, I am going to apply each of them into the case of Sweden and China. We will start from PDI and get the data from the figure shown in section 3.1.6, the summary chart.

China has a higher PDI index than Sweden does. According to DeVreede et al. (1998), China is more like to successfully adopt new technology since Chinese underlings
are less likely to question their supervisor about his/her decision. While according to Hasan and Ditsa (1999), Swedish underlings seem to be more likely to advice their supervisors which makes it easier to adopt new technology. In any case, it can be summarized as that, China, as a high PDI country, supervisors and underlings are less likely to talk about decisions. The organizations in China are not that democratic as that in Sweden.

Png et al. (2001), Thatcher et al. (2003) and other researchers found out countries in low UAI will be more innovate. As the chart shows, China and Sweden rates on the same level on this index. Thus, Chinese should be as willing as Swedes when it comes to accept new technology.

Sweden shows higher individualism than China does. Shore et al. (2001) found that countries in low individualism will face more ethical issues in software privacy. Milberg et al. (1995) researched on the aspect government control over privacy regulation and the results echoed Shore et al. Therefore, it seems that China has more software privacy problem than Sweden has.

MAS and LTO are the two dimensions which seldom been discussed by the literatures related to IT area. However, Hofstede himself pointed out some manifests interesting in LTO. He believed people from high LTO countries put much weight on the relationship between the people which is called guanxi in Chinese. As a result, Chinese, locating the highest position on this dimension, focus much more on guanxi than Swedes do.

In summary, figure 3.2 shows the main manifests due to cultural differences related to IT area.

<table>
<thead>
<tr>
<th>Cultural aspect</th>
<th>China is... than Sweden.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDI</td>
<td>Less democratic in organizations</td>
</tr>
<tr>
<td>UAI</td>
<td>Equally innovate</td>
</tr>
<tr>
<td>IDV</td>
<td>Faces more privacy problem in software</td>
</tr>
<tr>
<td>MAS</td>
<td>(not mentioned)</td>
</tr>
<tr>
<td>LTO</td>
<td>Focuses more on guanxi</td>
</tr>
</tbody>
</table>

Figure 3.2 manifests in IT area related to Hofstede’s theory
3.3 Software Culturalization

In 2002, Kersten et al. raised a concept named software culturalization. They believe that user interface is one interaction component and the other one is the applications’ logic and core functionality. It has been widely recognized localizing user interfaces to particular cultures is demanded while Kersten et al. focused on their study on the core functionality. They argue that deep culture can be embedded into application software in a modular way.

Five years after that, in 2007, Marble and Lu proposed an expanded model for culture-dependent characteristics of software products based on the findings of Kersten et al. and described their model under Chinese context. They conducted two interviews – nine months between each one – with a CIO of a large Chinese state-owned enterprise in the manufacturing sector.

During the interview, the CIO pointed out the currently available software did have gaps from what they really needed. He stated changes have been made in enterprise structures and management methods in order to fully benefit from western IT. He also affirmed the useful lessons that western software is forcing China’s managers to learn about efficient and effective business practice. Two areas are suggested while it comes to successful implementation of western software providers in Chinese firms. One is that “vendors teach management why to use the systems, and not just how” (Marble and Lu, 2007, p.372). The other improvement could be offered is language support. The content translated into Chinese is sometimes misinterpreted and often is simply not understood. Lai (2001) and Bin et al. (2003) have also mentioned it as a critical technical issue for international technology transfer.

One cultural issue which Marble and Lu (2007) emphasized most is the guanxi-based business practices. It “has received attention in expository business literature centers on the uniquely different patterns of business communication and relationship building observable in Chinese and in Western cultures” (Marble and Lu, 2007, p.368). Martinsons and Westwood (1997) examined it in an analysis which led to a conclusion that “it recognizes the personalism and the high context communications that govern relationships in Chinese business affairs” (Martinsons and Westwood, 1997, p.220). The forms to describe the concept of guanxi are different in various literatures. Lovett et al. (1999), for example, explained it as “the glue that holds Chinese society together” which was vivid to understand. Dunfee and Warren (2001) argued the core idea of guanxi involves relationships between or among individuals creating obligations for the continued exchange of favors. Steidlmeier (1999), from ethical aspect, pointed out the guanxi-based gift-giving prerequisites of Chinese business relationships is totally different from the criminal practice of bribery.

After explaining what guanxi is, there are numerous authors believed the appropriate use of guanxi would be positive, especially in the context of business. Dunfee and Warren (2001) noticed its ability to gain access to new customers, keep existing clients, facilitate daily business transactions, or even to avoid government investigation. Lovett et
al. (1999) pointed out it can be used to signal integrity in a system that lacks strong background institutions. Standifird and Marshall (2000) showed that the transaction cost will be reduced when dealings are based on guanxi instead of traditional Western approaches. The trust or assurance which guanxi can provide will avoid the using of contracting and legal services which are expensive and required by Western deals (Standifird and Marshall, 2000).

Having stressing guanxi as a fundamental Chinese cultural norm and combined this concept with two areas the CIO addressed in the interviews, Marble and Lu (2007) were able to expand the software culturalization model from Kersten et al. (2002) and explained the model under the Chinese context. Figure 3.3 shows the expanded model with instantiations under the Chinese context. Kersten et al. (2002) explicated culture-dependent aspects in software and they propose two aspects which are user interface of software and logic and core functionality embedded in software. Marble and Lu (2007) argued that the delivery of software to end-users should be included into those dependencies for the reason that “implementation strategies are significant cultural characteristics of software” (Marble and Lu, 2007, p.375). Thus, two culture-dependent aspects of software products have been expanded to three and Marble and Lu (2007) gave instantiations to each dependency respectively under the Chinese context. As figure 3.3 shows, one instantiation for user interface would be Chinese language support. Misunderstandings due to the poor content translation of software should be avoided by Western vendors. The instantiation for logic and core functionality is to support for guanxi-based business practices. Marble and Lu (2007) stressed the essential role of guanxi in business practices and they argue guanxi management should be embedded into software functionality. The added one is delivery and they believed it is important to educate managers why to use the software instead of how.

Figure 3.3 An expanded model for software culturalization

<table>
<thead>
<tr>
<th>Culture-Dependent Aspects of Software Products</th>
<th>Instantiations in the Chinese Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. User Interface*</td>
<td>Chinese language support</td>
</tr>
<tr>
<td>II. Logic and Core Functionality*</td>
<td>Support for Guanxi-based business practices</td>
</tr>
<tr>
<td>III. Delivery</td>
<td>Education for management in why (vs. how) to use the software</td>
</tr>
</tbody>
</table>

* Adopted from Kersten, Kersten & Rakowski, 2002

24
3.4 Research Path

Figure 3.4 shows the research path after this chapter. With those theories, I can design my interview topics and I will start to collect data. After analyzing the data from both sides, conclusions will be released.

![Research Path Diagram]

3.5 Theoretical Framework

As I have two research questions – although the first one is serving the second one – I want to present in this section on how I would use my theories. The three main theories are Hofstede’s cultural dimensions, literatures using Hofstede with their own conclusions in IT area and Marble and Lu’s software culturalization.

Hofstede’s cultural dimensions theory is the fundamental of answering the first question – What are the cultural differences between Sweden and China, and how people’s behaviors have been influenced in IT area? This theory illustrates why people behave differently under different cultural background what they will behave with different scores. The literatures using Hofstede’s theory are creating a bridge from the general theory to the
IT area. They described how different cultures influence people in IT area. Thus, by connecting those two, I could design my interview agenda to answer the **what** question. Furthermore, by understanding cultural differences between Sweden and China, we could give some suggestions on how to deal with the software transfer from Sweden to China which will partially answer the second question – How to provide a successful information management software introduction under the awareness of those cultural differences?

Marble and Lu’s model of software culturalization presented clear advice on introducing foreign software to China. They argue from three aspects which are user interface, logic & core functionality and delivery. I will also use my own experiences as well as interview to review the model which will be used as a supplement in answering the **how** question.

![Figure 3.5 Theoretical Framework](image)

Figure 3.5 shows how theoretical framework impacts my data collection. For example, I design my interview questions according to the theories. Marble & Lu claim that guanxi...
plays an important role in China. Thus, in the interview question, I will ask the interviewer from China about their opinion towards guanxi. Literatures using Hofstede’s theories believe UAI indicates the innovate degree. As Sweden and China have the similar level on this value, I will ask interviewers from both countries whether they feel the people are innovate. Basically, that is how I design my interview. The whole interview agenda can be found in Appendix A.
4 Data Collection

This chapter will mainly present the data I have collected according to the methodology and theory. In the methodology part, it is said that using multiple sources of evidence is one of the principles to control the construct validity. Strengths and weaknesses of different data sources have been discussed. After considering the availability, I picked up three data sources as a result which are documentation, participant observations and interviews. Documentation is used to provide background information such as information about the company. Participant observations and interviews are utilized to provide additional empirical data.

4.1 Documentations

Documentations are used to provide background information about this dissertation, e.g. the company information, not only the company that I am working with but also the one we are going to sell software to. These data has been stated in Chapter one and in this chapter as well.

Company X has started since 1991 in Sweden and not come to China until 2001. The company now has almost four hundred (400) employees in Sweden, Finland, Hungary, Ukraine and China, providing information management service all over the world.

4.2 Participant Observations

I was in charge of the translation of the software for my sponsor in February, 2009. My main job is to translate the whole software from English to Chinese. Although English is not my major, I have learnt English for more than ten years and have lived with English for nearly two years. It should not be difficult for me to understand the content but I was still struggling with the translation. The difficulties are generally from three aspects:

1. Phrase order

   Different languages have different grammars so the orders of the sentences vary from different languages. For example, when we require someone’s name, we say “what is your name?” in English. While if we translate the same sentence word by word from Chinese, it would be “your name is what?” The similar thing will happen on phrases as well. In Chinese, we say “the bag’s color” but never “color of the bag”. Therefore, when it comes to the software, I may confront some phrases such as “member of”. I am aware of the fact that there would be a word displayed after the phrase when the software is running. However, according to Chinese grammar, I cannot leave the word blank in the end. The blank should be in the beginning but I cannot change the structure of the expression.

2. Polysemes

   It is not hard to understand that a word may have multiple meanings. To choose an
accurate translation for a polyseme requires translators truly understand what the word really means in the context. When translating software, however, I am not able to explore every function in the software during a short period of time. It is said that 80% of the users are using only 20% functions of software. (reference needed?) I did turn to my colleagues, who are using this software, when I confronted ambiguous words. Yet, some of the functions they have never used thus they had no idea as well.

3. Exotic words

It is common that most languages have a number of exotic words which cannot easily be translated. For the same reason, some English words cannot find specific expressions in Chinese as well. “Check in” is an excellent example. In English, the term “check in” is widely used under various circumstances – generally when announcing one’s arrival at the airport, a hotel, when returning books to the library, etc. In all that situations, a mere “check in” will do. While in Chinese, it is more detailed and complicated. There is no Chinese term corresponding with the term. In a hotel, we say “register and move in” while in a library, it is expressed as “returning the book”. As a consequence, when “check in” appeared in the software interface, it is quite hard to replace it with a Chinese term.

To sum up, software translation is far away from just translating which concerns only on turning the meaning of words into target language. It requires the translator to understand the software comprehensively and sometimes need to change the codes of software.

4.3 Interviews

Interview is the main method for me to collect data in this dissertation. I prepared for two main interviews. One is with the Swedish site with the purpose to get general idea on how they do business in Sweden, the other one is with the Chinese site. By talking to the sales manager from China, I can then later compare to the condition in Sweden and give out conclusions after analyzing. All the interviews are following the “key informant interview agenda topics” in Appendix A.

4.3.1 Interview with Swedish site

The purpose of the interview is to compare the data in Sweden with the one from China. This interview was conducted with the project manager of software development in Sweden who has also been involved in the sales activities.

After my requiring, he introduced the sales process to me. There are two major ways here in Sweden to get attached to customers. One is to expect calls from customers. With over ten-year-experiences in the area they are still working at, Company X has become a professional information management company. This widely known reputation has brought them with continuously customer calls. The other way is to call potential customers initiatively. “There are an increasing number of companies.” The sales manager
explained to me, “We believe all companies need information management which makes our products and services useful to them.” When receiving the call, customers either are willing to have a talk or refuse a further discuss. The latter mainly have two reasons: having a current system running or a lack of budge.

With those customers who have interests in the software, the project manager will hold a meeting with them. After the meeting, customers will get back and go down to discuss democratically with the co-works who will involve in this change. When it comes to the sales form, the project manager introduced: “Although here in Sweden, copy right is well protected, we prefer to sell our service with the software.”

At last, I express those difficulties when I translated the software into Chinese before I make a suggestion of including a local people in the development team. In that way, this people can have the best understanding of the software and he/she also can adjust some expressions according to the target language. This idea has been approved by the project manager: “Yes. I agree with you on this point. Actually, we have thought about it for a while. I believe it would be better if the translator is someone inside the team.”

4.3.2 Interview with Chinese site

The Chinese interview was conducted with the sales manager from China. We have met each other before the interview when he paid a business visit in Sweden at the end of 2008. I picked him up at train station at that time and led him to his hotel. We had a brief talk afterwards which is mainly about the Company X offices in China, his work and difficulties he is facing. He said everything is hard in the beginning, so as the company’s condition now in China. The first office in China was built in 2006. In the recent two years, they were mainly serving their “old” customers who have expanded their market from Sweden to China. Now, Company X also wanted to follow the same way: searching for Chinese customers. They planned to start a market strategy in 2008 and this is the reason for the sales manager to visit Sweden. After one week tight schedule, the sales manager flew back to China, continued the market exploring.

Pilot interview

The first interview was conducted during the time the sales manager’s business trip in Sweden. This interview was more like a casual chat. We began with the status quo in China of information technology being used. “China was far behind from most western countries during the past few decades,” stated the sales manager, “and now we are trying to catch up – not only from the national level, but also organizational. Those companies who decided to become informationized will be competitive in the market. Recently, more and more companies want to arm themselves with IT so they are able to move fast towards the future. Thus, I am full of confidence of the software sales.” Having sipped some tee, the sales manager continued: “I have visited to some companies most of which were willing to talk. It is up to their supervisors actually. If a leader wished to have a try, I can see more
possibility to sell my software.” After hearing this, I expressed my feeling that Chinese are reluctant to buy software. “That would be true.” Nodded the sales manager, “That is why I am thinking of selling it with our service but not only the software. See, we have a professional team. We know the best how to use our software well to help them manage their information. We could put some employments in their offices and this form has been tried out before.”

Core interview
The core interview was taken place in March after the sales manager has found a large private high-tech enterprise which is interested of the software. They have stepped into the beginning of the negotiation when we did the interview. This private enterprise was established in 1988 and has now become one of the largest networking and telecommunications equipment suppliers in China which has its products exported to all over the world.

After greetings, I reported the sales manager about the difficulties I faced when translating the software and indicated I could revise it if I had a better understanding of the software later on. Then, I expressed to him the feeling that it would be better to include a local people in the development team so he/she could modify the source code sometime according to the target customer’s habit. He agreed with me on this point by saying “software localization is not only translation; it needs to be adapted to the new cultural context”. He then pointed out that “it is not only about the software itself but also the promotion materials about the software, such as the webpage of our company and white papers”. He continued explaining that since Company X is quite new in China, the webpage has not yet had a Chinese version, and neither do the white papers. The competitor, however, had entered China earlier than Company X did, therefore they seems more mature. They have a Chinese site on their homepage and also delicate white papers. He concluded in a sales’ point of view in the end: “we have to get all things localized so that it will be more convinced to customers.”

Despite localizing the software, we have also talked about the functions which could be added afterwards. The manager admitted that the customers did raise some requirements which the software could not achieve. “This is very common,” said the manager, “the software cannot fulfill all the customer’s needs in the beginning while we do not have to add them all.” Noticing I am confused, the manager continued with explanations: “Sometimes it will take too much effort to add a new function to software or modify it but customers are not willing to pay for it. Well, I have to talk to the project manager first to clarify the necessary and possibility to rebuild software before I negotiate with the customer.” “Negotiate with the customers?” I asked, “Are you going to persuade the customers to give up their potential needs?” “Not really.” He smiled, “you see, in China, we mainly use guanxi to do sales. We may adjust the software according to the customer’s needs but if the cost is unaffordable, I will consider using guanxi to persuade the
customers.” “Could you give some examples on that? How did you use guanxi to persuade customers?” Smiling at my question, he answered: “I am afraid I cannot tell. It should be our business secrets.” After a pause, he added: “and of course, we are not doing anything against the law.” “OK.” I gave up on the detailed inquiry, “so are you sure you are going to succeed?” “Not a hundred percent,” he laughed, “but that is how we do business in China.” “Well,” I recalled the contribution from Marble and Lu (2007) so I asked: “speaking of guanxi, since it is very important in China and is everywhere, some people suggested it to be embedded in the core function of information management software. What do you think of it? Do you think it would be a way that our software could head to since our software belongs to the area of information management software?” The sales manager seemed a little puzzled and surprised to hear this question: “Well, there is no doubt that guanxi plays an essential role in China in many aspects, including business. But why should it be embedded into software? So that we could manage it? I would rather say it is our heart to manage it, but not any tool.”

Having checked the first two points of my theoretical list, I continued with my last question: “Back to the communication section, when you introduced the software to the customer, did you emphasize on why to use it or how to use it?” “I spent my most time on acknowledge them why to use it. That is why I was saying the Chinese website and white papers are important. By them, I would easily show customers our company is formal and our service is professional. By providing our customer with our client successes stories, it would be more convinced to customers.”

Follow-up interview
Three months later after the core interview. I contacted the sales manager again to see how the project is going. However, the sales manager said it will take a few more months to get the offer. He told me a Chinese website has not been published yet and the private enterprise has to discuss to him back and forth with many details. “Doing business is not that simple as you imagine,” he said to me, “but I see a positive result.”
5 Analysis and Discussion

This chapter will mainly analyze the data presented in chapter 4, data collection, in relation to the information from chapter 3, theory.

5.1 Cultural Differences between Sweden and China

This section will mainly discuss the differences between Sweden and China in the cultural level. With the theories from Chapter 4, combined the interview data from Chapter 5, I will examine if those conclusions according to Hofstede (2005) and other literature are valid.

According to cultural dimensions from Hofstede (2005), PDI (Power Distance Index), UAI (Uncertainty Avoidance Index), MAS (Masculinity), IDV (Individualism) and LTO (Long-Term Orientation) are the five factors which influence people’s behaviors under differences. Literatures, which using Hofstede’s theory, reveal the affect in IT area while they mainly focus on PDI, UAI and IDV. LTO is a relatively new dimension so not many literatures utilize it when comes to IT area. However, Hofstede shows it gives a hint on an important value in China, guanxi. Thus, I use four (4) dimensions out of five (5) from the theories since one dimension – MAS – has seldom been mentioned in the related literatures.

5.1.1 Power Distance

The data provided from Hofstede (2005) shows that China scored relevantly higher of power distance index. Sweden ranks 67-68 in the list with seventy-four (74) countries and regions which shows it is more equal among Swedes by comparing the level of equality of Chinese which ranks 12-14. Those countries with higher power distance, as DeVreede et al. (1998) believed, are more likely to accept new technology with the reason that manager will be reluctant to let underling IT staff to be involved in the decision making process. The opposite finding indicates IT acceptance will increase with power distance decreasing. Hasan and Ditsa (1999) argued that subordinates will be more willing to give advice to supervisors about new technology in low power distance countries which will lead to more positive IT adoption.

From the interview, the sales manager admitted that in China, superiors will not go *down* to talk to underling co-workers about new changes. Instead, they will hold the discussion inside with colleagues on the same level. Project manager in Sweden stated that Swedish customers will talk to underling IT staff democratically if they are considering of the new technology adoption. For those customers who will call Company X themselves, I cannot reach them so I have no idea if it is their inferior co-works made the suggestion. However, I believe this situation will only occur when Company X has been in this market for some time so they will have the possibility to be known by customers. In Chinese market, Company X is quite new to most of the customers so it is not wise to wait for the calls from customers.

China is a country higher in PDI than that in Sweden. Hofstede (2005) believed
organizations in higher PDI context are more hierarchical. Subordinates may have less contact with superior. Literatures show that when it comes to adopting a new technology, managers in higher PDI country are less likely to discuss with the underlings which will be involved. In the interviews, the Swedish project manager and Chinese sales manager confirmed that it is always the manager that made up his/her mind, or mostly they only talk with the co-workers on the same level.

5.1.2 Uncertainty Avoidance
Data from Hofstede (2005) showed that Sweden and China are rated similar score of uncertainty avoidance index the scores are 29 and 30 respectively. The scores were low as Sweden ranks 70-71 and China ranks 68-69 among the seventy-four (74) investigated countries and regions. A number of researchers use this value to evaluate how it will affect the willingness to accept new technologies. Png et al. (2001), Thatcher et al. (2003), Straub (1984) and etc. all reached a similar result: countries which are low in uncertainty avoidance are more likely to adopt new technologies. The logic deduction is IT related to risks somehow so people high in uncertainty avoidance will be reluctant to accept risk-related new technologies. These findings lead to the conclusion that Sweden and China, as low uncertainty avoidance countries, are both positive to new technology.

Interview data reveals the similar result. Both the sales manager from China and the project manager from Sweden consider their customers to be positive with new technologies. Swedish customers are willing to try new things if they have the budget. Chinese sales manager also mentioned when he began to introduce the software, most customers would be interested in it and expected more information. The fact supports the conclusion which both Swedes and Chinese are willing to accept new technology.

Both Sweden and China show a relatively low level on UAI which literatures concluded countries in lower level of UAI will lead to be more innovated and willing to accept new technology. Chinese sales manager believed that during his introduction process, Chinese customers like to have a try on new things. Swedish project manager also concluded the similar result.

5.1.3 Individualism
In Hofstede’s (2005) research, Sweden shows a higher individualism characteristic comparing to that of China. The latter is more collectivism which ranks 56-61 among seventy-four (74) countries and regions when measured with individualism. Sweden ranks 13-14 in this value. Literatures using this value are mainly about IT ethical and social issues. Shore et al. (2001) found that people in high level of individualism will be more aware of software privacy. Milberg et al. (1995) believed that countries low in individualism will have more government involvement in privacy regulation. Having combined those findings, the conclusion is that China, lower individualism than Sweden, will be less aware of software privacy while it will face more government control in privacy regulation.
In the interview, the sales manager in China admitted that pirate software are popular while in Sweden, people respect property right more. Chinese are used to downloaded cracked software instead of buying software license. This situation makes software sales in China difficult to some extent. To package software with service would be a choice. In Sweden, even they do not face the software piracy problem, service are also sold with software.

Sweden shows a much higher IDV than China does. Relevant studies show countries of lower IDV face more problems on software piracy problem. It is also mentioned by Chinese manager that Chinese people are reluctant to pay for software.

5.1.4 Long-Term Orientation

Hofstede (2005) got the idea of this dimension with Chinese and China rank number one on this aspect. Data for this dimension are collected from thirty-nine (39) countries and Sweden ranked 23. This is a relatively new dimension so not many literatures utilize it when comes to IT area. According to Hofstede (2005) himself, countries which are long-term oriented are likely to build life-long relationship. This personal network is called guanxi in China. Marble and Lu (2007) also emphasize the importance of guanxi in business practices.

The sales manager did not deny the essential role guanxi plays in business. He confirmed the proper using of guanxi could assist sales. Plus, he stated that by using guanxi, he could even persuade customers to give up some requirements so software do not need to be reengineered.

In the LTO aspect, China ranks number one while Sweden scores relatively low. Few literatures have applied this aspect in IT area while Hofstede himself pointed out an interesting conclusion: people high in LTO are more focused on relationships. This bond between people is called guanxi in Chinese and literatures show its importance in business area.

5.1.5 Summary

From the above analysis, most of the theories have been supported. One controversial impact, PDI, has been clarified. DeVreede et al. (1998) believe PDI has positive impact for new technology adoption while Hasan and Ditsa (1999) argued about the negative side. The interview data supports the former – a person from the country which is higher in PDI is more likely to accept new technology. Theories show the willing of adopting new technology of the two countries should be on the same level since they are similar in UAI. The interview data reflects the same thing. Both Swedes and Chinese show their interests on the new software. Results from the interview data of IDV and LTO also echo the theories. China faces more severe problem of software privacy due to lower IDV and focused more on guanxi due to higher LTO.
5.2 How to Introduce the Software

This section will mainly talk about the actions which can be taken to provide a better software introduction. This discussion is based on the expanded model for software culturalization raised by Marble and Lu (2007) and data from interviews. Based on Marble and Lu’s software culturalization model and literatures, software culturalization contains three (3) aspects: software interface, core & logic functionality and delivery. This question will partially be answered by the software culturalization theory raised by Marble and Lu (2007) and combined with my own experiences and interviews. The other part is logically concluded from the answers of question 1 and interview data.

5.2.1 Software Localization

User interface is the first aspect of the culture-dependent aspects of software products. Marble and Lu (2007) gave the instantiation of this aspect in the Chinese context as Chinese language support. After my own observation, I found that, it is not only the language should be translated into the one used in target market, but also some expressions should be adjusted. Thus, I would prefer to call this aspect Software Localization.

Localization is “the process of adapting a product, in our context a software program, to a specific locale, i.e., to its language, standards and cultural norms as well as to the needs and expectations of a specific target market” (Dohler, 1997). In the theory part, it is stated that “language” is included into one of the three cultural-independent aspects of software products. Translation, with no doubt, is essential for software localization but not the only thing. As described in Chapter 4, difficulties may be confronted without understand the software comprehensive. Normally, it is translation companies that offer the localization service so that companies would save the expense to maintain in-house personnel. However, I believe it will be a better way to include a local people in the development team and let this local people be the translator. It is true that this kind of people may be lack of professional knowledge on translating while according to my own experiences, it does not require specific professional skills on this software translating. What is more, to be a part in the development team enables this people understand the software much better than any other professional translators do. She/he can also change the code according to the habits of the target culture. In my case, the target market is China which is well-known for its large number of low-cost programmer. To employ a Chinese programmer in the development team is practical and cost-saved. Both the project manager from Sweden and the sales manager in China have been agreed with this point of view.

Besides the software itself, promotion materials should be localized as well. To the similar reason, not only translate the website or white paper into Chinese, making adjustment according the culture of the target market is also important.

Software should be localized. My own experience suggests that it would be better to put a local people in the development team so that this people will know the exact meanings of every function which enables him to release accurate translation. This idea has
been expressed to the Chinese sales manager and the Swedish project manager. They both show agreement

5.2.2 Logic and Core Functionality
On this second cultural-dependent aspect of software product, Marble and Lu (2007) argued guanxi-based business practices should be accommodated in software. However, the sales manager from China was surprised when asked about if guanxi be embedded into one of the software functions. He admitted that guanxi plays an extremely important role in business in China while he claimed that guanxi is something that you keep in mind instead of using tools to “manage”.

The Chinese sales manager also acknowledged the existence of gaps between customers’ requirements and software’s functions. Customers often expect the software to be reengineered according to their needs while the sales manager suggested it is not always the case. Instead of rebuilding the software, the sales manager pointed out guanxi could be used to negotiate with customers so that they would make concessions on requirements. However, he refused to give examples on how to use guanxi as he considered it as “business secret”.

Guanxi was suggested to embed into software since guanxi is extremely important in China. However, the Chinese sales manager argued that guanxi can only be “managed by heart”. Still, he confirmed the essential role guanxi plays in business process. This statement echoes Hofstede’ theory about LTO.

5.2.3 Delivery
Marble and Lu (2007) added this aspect to the model from Kersten et al. (2002). They got this idea from the interview with a CIO of a SOE. The CIO suggested educating managers on why to use the software instead of how which has been confirmed by Chinese sales manager. Chinese are as willing as Swedes to accept new technology according to literatures, but still, reasons on why to use software are convinced to customers. Plus, the sales manager also emphasized the proper use of guanxi in delivery. As Marble and Lu (2007) indicated, guanxi do play a vital role in business practices. Thus, appropriate using of guanxi will perform a better introduction which will be more likely to lead to a successful sale.

The delivery aspect describes that customers should educate why to use the software instead of how. The Chinese sales manager agreed on this one and he also pointed out the importance of guanxi in business process. However, he refused to explain how to use it as he considered it as “business secret”. Thus, employ a people who know the “secret”.

5.2.4 Other Recommendations
The other recommendations are generated from the answers of Chapter 5.1. Chinese superiors will not talk to inferiors therefore, use guanxi only to superiors. Chinese and
Swedes both are open to new technologies so sales manager should be confident of introducing new things to Chinese. The Chinese sales manager often comes up to potential customers with new products. When it comes to software piracy problem, it is suggested to avoid selling software license alone. Service can be packed in.
6 Conclusions

This chapter will answer the research questions raised in Chapter 1. After interpreting my conclusions, I explain how I evaluate my results and generalize them. In the end of this chapter, I give some suggestions for future work and finally I review my research according to the validity and reliability criteria discussed in the methodology chapter.

The aim of this dissertation is to undertake a qualitative investigation of gaps between a Swedish producer and Chinese consumer focusing on cultural issues. The intention is to identify factors which cause those gaps, in order to provide a recommendation list for supporting successful software introduction. There are two research questions in this dissertation and I will answer them respectively.

1. What are the cultural differences between Sweden and China and how people’s behaviors have been influenced in IT area?

In summary, major cultural differences which influence the behaviors in IT area are listed as follows:

- Higher power distance makes China less democratic in workplaces so it is mainly decided by supervisors whether to adopt a new technology.
- Equally and relatively low level on uncertainty avoidance of Chinese and Swedes shows they both are willing to accept new technology.
- Lower individualism of Chinese face more ethical problems with software piracy than Swedes do.
- China, as a long-term orientated country, focus more on relationship – guanxi – compared to Sweden.

2. How to provide a successful information management software introduction under the awareness of the cultural differences?

To sum up, the seven (7) recommendations are listed below which answer the second research question:

- To include a local people in the development team in important in order to get assistance in the software localization.
- When customers claim they need some functions not yet included in the software, sometimes guanxi can be used to negotiate with them instead of reengineering.
- Guanxi plays a key role on delivering software. Use guanxi to persuade customers and educate them why instead of how.
- The use of guanxi remains a “business secret” so employ someone who knows it.
- As it is mainly the supervisors who make decision, only using guanxi to supervisors would be enough.
- Chinese are willing to try new technology so do not be afraid to approach them.
- China faces more problems in software piracy so avoid selling software license or sell it in a package. (e.g. sold with service)
6.1 Evaluation of results

Hevner et al. (2004) stated some guidelines related to design-science research guidelines that “the utility, quality, and efficacy of a design artifact must be rigorously demonstrated via well-executed evaluation methods” (Hevner, 2004, p.83). He also suggested some evaluation methods, such as descriptive, testing, etc. One of the descriptive methods, informed argument, is to “use information from the knowledge base (e.g. relevant research) to build a convincing argument for the artifact’s utility” (Hevner, 2004, p.83). I followed this advice and reviewed a large number of literatures in order to describe the cultural differences and how they influence people’s behaviors under various cultural backgrounds.

I also tested my results by doing a follow-up interview with the Chinese sales manager. It is direct to see how the project is going. Although, it will take a few months to see actual results, the sales manager’s impression was that the business is positively progressing.

6.2 Generalization of results

One of the biggest problems in case-study research is how to generalize the results. Many researchers doubt the possibility of the generalization from single case study. However, Easton (2003) argued that one case study is enough. He believed that the justification that is frequently used is the depth and comprehensiveness of case study. Therefore, he confirmed various data sources play a key role in case study. Multiple sources of data were recommended to be used so that “deeper, thicker and holistic” results can be drawn. Case research can be justified on the richness of the output or it reveals something of great practical use. I have used multiple data sources in my case so that I can achieve a rich output with practical recommendations. Thus, based on Easton’s argument, my result can be generalized.

In the methodology part of this dissertation, I introduced four (4) tests to judge the quality of case study. One of the tests is external validity which “deals with the problem of knowing whether a study’s findings are generalizable beyond the immediate case study” (Yin, 2003, p.36). The tactic for single case study to ensure the external validity is to use theory. I have used theories in my single case study. My findings are not only valid for Company X but should benefit all Swedish companies which want to do business in China. The reason is that the theories I am using are on the national level so that the companies which falls into the same region will have the same impact. Thus, I argued that my results can be generalized to all companies in Sweden which want to sell their product – especially IT product – to China.

6.3 Future work

Culture issues can be talked about forever. This dissertation is only focusing on Sweden and China. As China is a growing market, businessmen from all over the world want to share the market. By focusing on the IT area, original producer country can be expanded.
Since all Scandinavian countries have similar culture, maybe the results can be generalized to all Scandinavian countries after more extensive research. Thus, how about a Scandinavian producer and a Chinese customer? How about a European producer and an Asian customer? How about any producer to any customer when they are not from the same country? Is there any rule we can follow? How can we keep culture issue in mind on international business and benefit from the awareness?

6.4 Critical Review

In the end of this dissertation, I would like to go back to the criterion for judging the quality of research in Chapter 2. The four tests are: Construct validity, Internal validity, External validity and Reliability.

Construct validity concerns the issue of that a case study investigator sometimes would use “subjective” judgments to collect the data. To solve this problem, I used a variety of evidence sources gathered from articles, books and data from Internet and also empirical data collected by documentations, interviews and participant observation. Sometimes I cannot be pure “objective” especially in the observation part. Multiple sources helped me ensure construct validity on a decent level.

Internal validity establishes a causal relationship, whereby certain conditions are shown to lead to other conditions. This validity is to control the case study researcher to be “inferred” with a particular event. To avoid this “inference”, one tactic is explanation-building. This strategy is to build an explanation first and analyze the case study data. In my dissertation, I first built explanation for different behaviors from the two countries. These explanations are based on theories. Then, I worked on finding linkages between theories and empirical data. After the dissertation, the internal validity has been controlled.

External validity is a kind of test measuring whether a study’s contribution can be generalized beyond the current case study. For single-case study, using theories will control this validity. I have discussed this one in Chapter 6.2

Reliability is the most familiar test which enables a later investigator to follow the same processes as I have described and conduct the same case study leading to the same or similar conclusion. This is the questionable as a criterion to be applied in this research. My case study can be re-conducted by others while it is not likely that exact same conclusions may be drawn. The world is always changing. I experience that Chinese people are more westernized after being two-year abroad. What will China be in the future? Maybe that would be another result.
References


Appendix A. Key informant interview agenda topics

Interview with Swedish site
◆ The normal sales process in Sweden
  - How will you find potential customs?
  - Will the manager from custom site go down to subordinates who will be involved in this program before he/she made up his/her mind?
  - Do you sell license or service? Why?
◆ Software interface
  - Do you think it will be better to include a local people in the develop team so that he/she could help with software translation?

Interview with Chinese site
Pilot interview
Casual talk, no topics prepared.

Core interview
◆ Software interface
  - Is it better to include a local people in the develop team so that he/she could help with software translation?
◆ Logic and core functionality
  - What will do if the software does not fully meet the customers’ needs?
  - Do you think guanxi management should be embedded in the software?
◆ Delivery
  - How will you normally introduce the software to your customs?
  - Do you tell them how to use the software or why?
  - Do you think Chinese companies are willing to try new technologies?
  - Will the manager from custom site go down to subordinates who will be involved in this program before he/she made up his/her mind?
  - Do you sell license or service? Why?

Follow-up interview
◆ Project progress
  - How is the project going?